

PLASTIC PUBLICS

ERIKA BIDDLE

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Abstract

My dissertation offers an intellectual history of the various technological, aesthetic, affective, and overtly political encounters that modulate people—not so much as individuals but as connected and controllable social groups, as well as processes of locating and then reconfiguring ourselves within networks. This is what I have come to refer to as *plastic publics*, keeping in mind the double-meaning of plasticity—that it is at once about altering and holding form. I propose ‘rethinking’ cultural shifts in behavioral determinism (the shaping of people) over the last 150 years, tying them to relations with technology and developments in neuroscience, to understand the governance of plastic publics. What emerges is an understanding of control that extends beyond coercion and instead relies on the brain’s mechanisms for learning, understanding, building habits, and making decisions to program and compose publics.

New technologies have allowed an intimacy of control that has been absent since humans self-organized in small social groups. This, I will argue, is the “dark side” of McLuhan’s global village. Developments that have taken place as part of industrial capitalism’s shift into consumer capitalism, a framework driven by mass consumption that peaked in the twentieth century, signaled a trend of denoetization, or the loss of the ability to think critically that foregrounds the affective, contagious, and, in this sense, mimetic techniques at work/play in administering publics under the conditions of neurocapitalism. Digital networked technologies have altered the way information flows and how people communicate, but also the shape and composition of publics, in which we deem ourselves and become not subjects, but projects, always modulating. What has been emerging is a new form of social control that is conceptualized here as “*incontinence*.” We now have a neuroscientific framework that recognizes and seeks to understand the changes that occur when we plug into the rapid feedback mechanisms in networked culture, but we have yet to come to terms with the implications on a scale beyond the individual. If we want to reimagine the story of control, what we really want to do is reimagine the story of feedback.

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INTRODUCTION TO PLASTIC PUBLICS: THEORIZING PLASTICITY UNDER PRESSURE

The test that you are to take now will measure your ability to remain steady under pressure. The pressure will consist of your anxiety to remain in Air-Crew training. It will consist of your own fear that you will be eliminated. It will consist of your own weakness and secret doubts. It will consist of jumping nerves that you cannot control. This test will pit you against yourself. Every man has fear. Every man has tenses. Every man has weakness and jumping nerves and secret doubts. But not every man can control these things. —Moss Hart, *Winged Victory* (1943)¹

Ours is the first age in which many thousands of the best-trained individual minds have made it a full-time business to get inside the collective public mind. To get inside in order to manipulate, exploit, control is the object now. And to generate heat not light is the intention. To keep everybody in the helpless state engendered by prolonged mental rutting is the effect of many ads and much entertainment alike. —Marshall McLuhan, *The Mechanical Bride* (1951)

We do not live in a kind of void, inside of which we could place individuals and things. . . . We live inside a set of relations. —Michel Foucault, “Of Other Spaces” (1967)

This dissertation takes on the sociotechnological composition and shaping of publics. It focuses on how networked technologies alter not only the way information flows and people communicate, but also the shaping and composing of publics. This includes looking at historical cultural shifts in views of behavioral determinism (the shaping of people) and tying them to relations with technology and developments in understanding the brain—including views on progress, speed, and the increasing use of networked digital platforms. The scale and speed of public transformation is akin to *social terraforming*—that is, we are creating new social worlds in which we are constantly locating and reconfiguring ourselves along sociotechnical networks.

‘Plastic publics’ then, refers to the various technological, aesthetic, affective, and overtly political encounters that modulate people—not so much as individuals but as connected and controllable social groups—as well as the processes of locating and then reconfiguring ourselves within networks. What is emerging is an understanding of control that extends beyond coercion

and instead seeks to investigate how relentless, immersive, technologically mediated social engagement relies on the brain's mechanisms for learning, understanding, building habits, and making decisions to compose and program publics. This dissertation considers control as a learning system, or rather, networked learning systems. Today these systems learn faster than ever, mutating and reproducing with speeds that exceed human direction and knowledge. Control is not just the power to direct, but to shape—in short to create. Forms of control shift, evolve, or disappear, change with societies, develop with technologies, and modify through experiences of failure and success. But control remains always social, always linked to human interaction, systems of subjectivity, language, technology, and capital.

To understand how control systems learn, and how systems of control are getting better at learning to learn, this dissertation engages the genealogical diagram of power begun by Michel Foucault in the 1970s and extended by Gilles Deleuze in the 1990s to theorize *plasticity* and *incontinence* as new forms and relations of control in *neurocapitalism*.² In *Discipline and Punish: The Birth of the Prison*—originally published as *Surveiller et punir : Naissance de la prison* (Gallimard 1975)—Michel Foucault provides a genealogy of disciplinary power, describing a biopower in which social control, the industrial economy and technological production, social institutions, surveillance, bodies and subjectivities are inextricably linked. Foucault notes epistemological shifts that are often technologically driven shifts in our understanding of control. This dissertation extends—is an antenna emerging from within—Foucault's inquiry into the disciplinary apparatus, how its overlapping configuration of prison and pedagogy was used to mold disciplinary subjectivity, how its panoptic architectural mechanism becomes modernized as a technology-enhanced relational yet impersonal “surveillance culture”³ in which we all become willing participants in our own self-quantification.

As early as the 1970s (see **Chapter 8**, on his presentations at the “Schizo-Culture” conference), Deleuze extends Foucault's work on disciplinary forms of enclosure in the eighteenth and nineteenth centuries and his discourse on biopolitics and power into what I describe in this dissertation as *esemplastic* forms of the second half of the twentieth century and early twenty-first century; what Deleuze terms “societies of control.” Esemplasticity is derived from a melding of the ancient Greek phrase σε ένα “into one,” with plastic [εὐπλαστος], meaning having the capacity

to shape into one. For something to be esemplastic, it has to be *actively shaping* or have the power to shape disparate elements into a whole. The first documented use of “esemplastic” was by Romantic poet Samuel Coleridge, who used to describe the active power of the imagination to shape disparate things—experiences, sensations, images, emotions—into a unified whole (of creative composition) in his *Biographia Literaria* (1817).⁴ Here, esemplasticity is used to describe the cybernetic transmutation of disciplinary power from a spatialized concept of discrete enclosures active in the distribution and shaping of subjects “from the school, to the barracks, then to the factory” to “ultrarapid forms of free-floating control” that make publics into endlessly versioning computational projects.

STS scholar Victoria Pitts-Taylor situates the plastic brain within Deleuzian transformative processes of ‘becoming’: “The plastic brain is ontogenetically shaped in dynamic relation with its environment; this means, in the language of Henri Bergson and Deleuze, that brains are biological *becomings*, always in process, always open to transforming themselves and being transformed.”⁵ Plasticity is considered in this dissertation as a shaping and ordering power and a modifying power that reproduces not subjects, but *projects*. Byung-Chul Han observes how this affects and takes effect within contemporary global publics in his engagement of biopower, which he terms “psychopolitics”: “Today, we do not deem ourselves subjugated subjects, but rather projects: always refashioning and reinventing ourselves. A sense of freedom attends passing from the state of subject to that of project. All the same, this projection amounts to a form of compulsion and constraint—indeed, to a *more efficient kind of subjectivation and subjugation*. As a project deeming itself free of external and alien limitations, the *I* is now subjugating itself to internal limitations and self-constraints, which are taking the form of compulsive achievement and optimization.”⁶

In another contemporary engagement with this diagram, Giorgio Griziotti describes neurocapitalism as a mutant, monstrous form that feeds on subjectivities in its exhaustive appetite for revenue: “neurocapitalism’s algorithms go beyond the industrial machine, operating more than a subdivision, but an extensive corruption in the space-time of life. This mode of functioning sterilizes the richness of relations and directs desire, artificially saturating the senses and emotional responses. This is how the bulimic monster of Big Data is nourished.”⁷ Neurocapitalism, Griziotti

writes, is not the same as “cognitive capitalism” which signifies the historical passage from industrial forms of labor and capital to more knowledge-based and immaterial forms and a new paradigm or structure for a neoliberal economy. Neurocapitalism, as I understand it, involves the conditioning and steering of emotion, affect, our neuroplastic potential and behavioral control via pervasive surveillance and sousveillance technologies. Gaming the plasticity of our brains is a soft, *intimate* control.

Furthermore, as Tony D. Sampson suggests, contemporary forms of power operate through the virality or contagion of affect and emotion, and this operates at the intra-active level of the brain and the body systems of self-regulation. This is why what Sampson and others call “neuropolitics” is an important framework for understanding contemporary forms of power and control.⁸ The plasticity of control systems is not just a matter of external manipulation or social engineering, but operates at a much deeper level, involving the manipulation of affect, emotion, and even the neurochemical and cellular processes of the brain. Plasticity operates not just as social or cultural phenomena, but as deeply embodied and neurobiological processes. We must examine the implications of this for our understanding of power, control, and subjectivity.

This dissertation argues: (1) the social always involves control; (2) control is not tied to any particular political system or ideology, but rather runs through everything we do and are as social groups and social persons; (3) control is coextensive with learning; (4) new technologies have allowed an intimacy of control that has been absent since humans self-organized in small social groups. This, I will argue, is the “dark side” of McLuhan’s global village. Developments that took place as part of industrial capitalism’s shift into “consumer capitalism, a framework driven by mass consumption” that peaked in the twentieth century, signaled a “trend of denoetization”⁹ or the loss of the ability to think that, I will argue in later chapters and future writing, foregrounds the affective, contagious, and, in this sense, mimetic techniques at work/play in administering contemporary publics under the conditions of neurocapitalism.

This chapter provides an introduction to plasticity, and how contemporary publics embody this abstract materiality and its mutable ontology. Following this, I provide a walkthrough of the dissertation’s nine chapters. Take note: there will also be a caesura—a break or pause—consisting of a somatic exercise for deepening our capacities for listening, awareness, understanding, and

critical engagement.

Plastic: From Space Age Material to Organizing Principle

In *What Should We Do With Our Brains?*, contemporary philosopher Catherine Malabou discusses how plasticity appears in everyday speech as the opposite of rigidity, it “designates suppleness, a faculty for adaptation, the ability to evolve.”¹⁰ Etymologically, plastic derives from the Greek *plassein*. It has a double meaning: it is at once the capacity to mold and the capacity to receive form, echoing cyberneticist and ecologist Gregory Bateson, “if one exists one is shaping—consciously or unconsciously—the materiality of oneself, the social, the earth.”¹¹

However, by middle of the twentieth century, the word ‘plastic’ would conjure one thing in every mind: the ubiquitous, consummately American material made of long, repetitive networks of molecules called polymers. Polymers’ shape is what gives plastics their plasticity, *allowing them to modulate into any shape*. In iconic mid-twentieth-century film *The Graduate* (1968), an Establishment elder portends some wisdom to the protagonist Benjamin Braddock: “I just want to say one word to you. Just one word . . . plastics.”¹²

As Roland Barthes argued in 1956, at the height of the “Age of Plastic,” “More than a substance, plastic is the very idea of its infinite transformation.”¹³ Plastic depends on the outside world, its environmental conditions, to form its character. It is material known by how it is used. Barthes’ essay is a meditation on plastic in which it is rendered a “material without qualities,” like the titular character out of Robert Musil’s modernist novel *The Man without Qualities*. This protean adaptability came to be plastic’s best and most commodifiable quality. Its responsiveness to molds can make valuable and valueless things appear equal. It came to be associated with and even to define futurity. At the height of the Age of Plastic, in the immediate post-World War II years, all things that were made future-forward—brighter, stronger, more flexible—were plastic. In his 1995 book *American Plastic: A Cultural History*, Jeffrey Meikle describes plastic as a material that has at once codified greater human control over nature while at the same time, its “innate formlessness has suggested the outlines of a material world ever more malleable in the face of human desire . . . plastic gradually appeared less a discrete product rationally controlled by

its makers and more a catalyst or mirror of unpredictable change.”¹⁴ Plastic “conveys movement in every fold,”¹⁵ and has come to describe any material characterized by nonlinear elasticity.¹⁶

By the mid-twentieth century, with the ubiquity of plastics, everyday life took on some of its qualities—it became more malleable, more intangible, open to creative remolding and reshaping. In the post-nuclear era, plastic took on some of the qualities of atomic energy—an intangible threat of “lifeless conformity,” self-destruction, massive environmental degradation and destruction, something that does not fulfill its promise to connect (even if by mediation) to life and living but rather alienates.¹⁷ Meikle’s *American Plastic* offers a definitive cultural anthropology of plastic’s role in shaping interwar and postwar US culture. By the late twentieth century, he notes the material composition of plasticity shifted, from polymers to electrons, from a material anyshapewhatsoever to the immateriality of digital culture. Meikle writes, “the physical yielded to the digital, the material to the immaterial, the plastic presence to the process of plasticity. As that transformation began, or as intellectuals posited such a transformation (e.g., Umberto Eco, Jean Baudrillard), plastic’s meaning began to shift almost beyond any correlation with material things. Once again, after several decades, plastic expressed a sense of limitless shape-shifting.”¹⁸

More recently, plastics or rather plasticity has come to be associated with our brains themselves, and more particularly their ability to be transformed, to receive shape based on our experiences and habits and thereby shape experience and habit; although even this conception dates back to at least the nineteenth century. Initial discoveries in neuroplasticity were made by psychologists, particularly those who were interested in the physiology of psychology and in particular habit formation, such as William James, who in *The Principles of Psychology* (1918) wrote: plasticity “means the possession of a structure weak enough to yield influence, but strong enough not to yield all at once. Organic matter, especially nervous tissue, seems endowed with a very extraordinary degree of plasticity of this sort.”¹⁹ In summary, he introduced plasticity through the concept that forms of adaptive behavior, such as habits, both produce and are reflections of changes in the brain.

Plasticity and the Micropolitics of Habit

This dissertation joins a growing body of critical theorists—including new materialist philosophers, philosophers of technology, digital humanities and STS scholars, and political, media, and cultural theorists—whose work engages the biopolitics of life and living in the contemporary world (how our lives and deaths are governed). I argue that beyond the steering of publics through affect management afforded by ubiquitous digital technologies and connectivity, plasticity is the new locus of twenty-first social control. Plasticity is the guiding concern of philosopher Catherine Malabou’s work over the past two decades.²⁰ Malabou’s uniquely transdisciplinary philosophical inquiry into plasticity is entangled with biological and neurobiological discoveries—in particular, those of Joseph E. LeDoux, Eric Kandel, V.S. Ramachandran, and Antonio Damasio—that are evolving our understanding of the emotional basis of embodied cognition and of consciousness in relationship to emerging technologies and ways of communicating. Thus, in the opening sentence of *What Should We Do With Our Brains?* (paraphrasing Marx [in the *Eighteenth Brumaire of Louis Bonaparte* (1851–1852)],²¹ Malabou writes:

The brain is our work and we do not know it. The brain is constituted by modifications of modifications, of ‘re-representations,’ and we do not know it. The brain owes its vitality to a perpetual change in plasticity (which is also to say a plasticity of change itself) and we do not know it.²²

Malabou proposes that what we have come to learn about the plasticity of the brain—its function, organization, and its pathologies—is that it seems a mirror image of, or model for, communicative capitalism: it is “an auto-organization at once dynamic, multipolar and adaptive to circumstance.”²³ Malabou conceives of the brain as a nexus of relations, much like Michel Foucault’s heterotopias or Gilles Deleuze’s rhizomes: “the functional plasticity of the brain deconstructs its function as the central organ and generates the image of a fluid process, somehow present everywhere and nowhere, which places the outside and the inside in contact by developing an internal principle of cooperation, assistance, and repair, and an external principle of adaptation and evolution.”²⁴ The brain is a fluid process that is “everywhere and nowhere” (this is Malabou

citing Maurice Merleau-Ponty)²⁵; it is not a sited organ or discourse. It exhibits qualities of network, delocalization, and adaptation; it is “distributed plastically throughout the body.”²⁶

Brain mapping—understanding the brain’s anatomy in terms of the localization of its functions—first emerged in neuroscience in the nineteenth century. Brain mapping is what enabled scientists to first detect how the brain changes with aging, injury, and learning. It took time and observation to see how it worked together as a system. It calls to mind the “universal modulation” that animates Deleuze’s societies of control and which is explored through this dissertation’s focus on the plasticity of publics.

Similarly, Malabou’s critical call to plastic action echoes Deleuze in conversation with Antonio Negri more than thirty years ago:

I think subjectification, events, and brains are more or less the same thing. What we most lack is a belief in the world, we’ve quite lost the world, it’s been taken from us. If you believe in the world you precipitate events, however inconspicuous, that elude control, you engender new space-times, however small their surface or volume. It’s what you [Antonio Negri] call *pietas*. Our ability to resist control, our submission to it, has to be assessed at the level of our every move. We need both creativity *and* a people.²⁷

The passage concludes with a call for “both creativity *and* a people,” highlighting the importance of assessing our ability to resist control at the level of our everyday actions, emphasizing the need for both creativity and a collective sense of a social group, a public, or “a people” in the reciprocal giving and receiving of form that is “the fundamental quality of plasticity (as Malabou never ceases to reiterate).”²⁸ What is at stake here is that humans lack the awareness, let alone critical consciousness, of our own “plastic possibility” which is our capacity and inherent tendency to be always mutable, in movement, already activated/actualized in the reciprocal process of giving and receiving form. Without *consciousness* of our plastic possibility, we tend to “deepen the cut of habitual contours in or of the world instead of forging new ones.”²⁹

There is a popular misconception of habit formation as an individualized process of ossification, as that which holds us in place and prevents change. By contrast, this dissertation engages feedback as the basis of habit formation—it is what provides movement and shape to experience and helps us learn. It considers, drawing upon the works of Malabou and Deleuze, how

habit is elemental to learning and at the same time, has a paradoxical relationship to learning: “it is both the product of learning and the escape from learning.”³⁰ However, habit formation, the work of habit, of reshaping our habits or plasticity, is both a prison and a way out—in Deleuzian terms, a “line of flight” from an oppressive sociopolitical world. Habit formation—owing to its plasticity and being composed by feedback—is not a fixed process but rather a highly malleable one that can be reshaped or reprogrammed to generate new ways of becoming and eluding control. This process of reshaping habits or plasticity, therefore, becomes a potential site of agency, empowerment, and transformation in the face of new forms of social and political control.

The Plasticity of Publics

As will be discussed in the following chapter (**Chapter 2, ON PUBLICS**), the notion of the public is a creation of the late-nineteenth, early twentieth century. It is usually linked with everyday life in urban cosmopolitan spaces connected by newspapers and telegraph lines, and later in its evolution, with the far more ephemeral energetic flows provided by information-rich feedback between screens, devices, profiles, memes, etc. In the industrial nineteenth and twentieth centuries, works by Charles Baudelaire, Louis Aragon, Walter Benjamin, and Jane Jacob, for example, shared the theme of what makes a city is its impersonality and promise of plastic possibility. These authors “find in crowds a peculiar antidote to selfhood with all its burdens, a release into a less personalized existence. That release has a particular value in terms of social class and material fortune; density and equality have an affinity in daily experience.”³¹ This sense of freedom allows, in actuality, more efficient kinds of self-monitoring (subjectivation) and control (subjugation) “which are taking the form of compulsive achievement and optimization.”³² Life and living in contemporary societies of control involves steering the malleability of human brains and behavior—specifically how they are materially affected by learning, experience, training—in the service of Big Data and capitalism. Or, as Byung-Chul Han observes: “The digitalized, networked subject is a *panopticon of itself*. This ensures that each and every person has now taken on the task of conducting perpetual auto-surveillance.”³³ While Han does not connect his psychopolitical concept to plasticity here in a direct way, my dissertation argues that this is the substance of contemporary digital psychopolitical publics.

Plasticity involves more than soft power; it is an *intimate* control. A paradigm shift has taken place in the administration of neurocapitalism, in which stirring affects, steering and shaping emotional patterns, has become more critical for control of social groups than rationality. Contemporary neurosciences confirm that attacks on the “emotional brain”³⁴ pose grave threats to social regulation, adaptation, and survival on a planetary scale. Aldous Huxley, having lived through the rise and fall of Hitler—widely cited as the first world leader to recognize that the way to systematically move and motivate crowds was to appeal to their feelings and unconscious drives—addresses this at length in *Brave New World Revisited* (1958). In sum, he wrote, “the subhuman mindlessness to which the demagogue makes his appeal, the moral imbecility on which he relies when he goads his victims into action, are characteristic not of men and women as individuals, but of men and women in masses.”³⁵

Countless books have also been written about how emotion has become capital in neoliberal forms of immaterial production, in that it involves the reproduction and distribution of our most intimate matter, our affects and subjectivities. Brains, behavior, and subjectivities are materially entwined by banal processes of technological self-contamination; this includes using a smartphone, wearing an Apple Watch, tracking self-value in social media feeds, or the sublimated behavioral economics of big data which combine all of these datasets (and more) to compose plastic publics. As the Critical Art Ensemble observes of the technological developments of control systems: “There are more and better technologies than ever before to ensure that when they are internalized, they not only drive behavior, but actually determine subjectivity.”³⁶

This is not entirely new. Since the mid-nineteenth century, scientific knowledge has been used to control the behavior of people in modern industrial society. Historian Phillipp Sarasin locates this emergence in mid-to-late nineteenth-century European hygiene discourse. Sarasin writes, “the discourse of hygiene developed as a means of thinking of the body as the ‘property’ of the autonomous (usually male) bourgeois subject,” and in this narrative, the body was therefore an “alien object” that was constantly threatening to “escape his control.”³⁷ Further to this, Sarasin outlines how the hygienists understood the body as a medium and their view of the body as a “media-machine.” In a move away from the Cartesian notion of the body as clockwork automata

with a central organization system, the media-machine owes its existence to networked systems of complex physiological, medial, and semiotic processes.

Sarasin uses a Foucauldian frame of analysis, in which he notes above all these late-nineteenth century hygienists were interested in promoting certain Enlightenment models of behavior toward the self. Media and discourse produce self-knowledge and are reproduced by this “knowledge,” and as Sarasin writes, “knowledge . . . always passes through media.”³⁸ Herein lies the origin of the contemporary capitalist subject, a sensitive organism who engages in a lifelong construction of self-creation, cultural creation, technosocial-imaginal recreation, etc. via feedback mechanisms. For this cadre of nineteenth-century Western European hygienists—Karl Friedrich Burdach (Germany), Charles Londe (France), Jean-Noël Halle (France)—the copulation of knowledge and media produced the ideal Enlightenment subjectivity: *the sentient machine*. For Londe, who is known for developing the methodology for public hygiene in modern France, it served as evidence that precise guides for needs and desires (provided by expert scientists, or hygienists) would keep the behavior of the modern subject in control by appeals to the body’s “information system” and its techniques of making sense of/measuring quantities and flows in a deluge of competing messages. As Foucault observed in his analysis of biopower, control on the body does not necessarily come from the outside. The control can be built inside: in the very relationship between self-perception and identity.

Whereas one could argue postwar America’s plastic culture emphasized a slippery world of surfaces and appearances, the current ontology of plastic draws upon that era’s countercultural expression: as experimentation, auditory, and immersive environments focused on ecological “merging with” and becoming other. What connects disciplinary subjectivity, the shaping of control societies, and the info-glomeration of contemporary publics is how pervasive surveillance in the environment becomes internalized and habituated (first gradually and with support but then automatically and auto-nomosly) through a new range of social control techniques that are increasingly plastic and autopoetic (operating, shaping, and reshaping at different registers of affectivity, psychology, the somatic, neurocognition). Franco “Bifo” Berardi argues across recent books, essays, and public talks, the hyperconnectivity of the digital communication environment acts on the level of social nonconsciousness, affecting mutation in the social brain. William

Burroughs also was attuned to this, in comparing language to an ancient virus that triggered the separation of conscious human experience—basic cognitive automatisms—from biological nature; what Gilbert Simondon refers to as “individuation.” Burroughs’ word virus is the internal monologue, all but impossible to shut off and expressly nonhuman, which produces an all-too-human sense of identity and self-continuity, the “self,” which is in effect the self-colonization of inner space. While Berardi concedes that happy mutations are possible, he mostly describes a plasti-psychosphere sculpted by the social and economic context of neurocapitalism; in particular, its accelerating precarity, competition, and anxiety.³⁹

In its most contemporary phase, plastic as both material and metaphor undergirds what Meikle called “the culture of synthesis,” the postmodern condition in which “the world [is] so responsive to incompatible desires that it fragment[s] into individual facets generating meaning only through juxtaposition.”⁴⁰ Modern social life is constituted by juxtapositions, such as with the “the blurring of rationality and irrationality at the heart of algorithmic regimes.”⁴¹

By 2000, the malleability demanded of the contemporary worker in global capitalism is already described as “manic.” Emily Martin writes we are “always adapting, scanning the environment, continuously changing in creative and innovative ways, flying from one thing to another, pushing the limits of everything, doing it all with an intense level of energy focused totally on the future.”⁴² By the early 2010s, the conditions of communication and information access have reconfigured submission to power as a feature of technological consumption with the requirement of continual self-administration. Jonathan Crary writes: “Every new product or service presents itself as essential for the bureaucratic organization of one’s life, and there is an ever-growing number of routines and needs that constitute this life that no one has actually chosen.” Drawing upon Giorgio Agamben, he continues, “In actuality there is an imposed and inescapable uniformity to our compulsory labor of self-management. The illusion of choice and autonomy is one of the foundations of this global system of auto-regulation.”⁴³ Beyond the leveling effect provided by total communication, total surveillance, and seemingly without the possibility of informationally self-determining ourselves, we are entering a period of control that resembles a total lack of self-control and self-knowledge. As Byung-Chul Han writes of the current situation, we have entered an age of “digital psychopolitics . . . [which] means passing from passive surveillance to active

steering.”⁴⁴ In this era of “surveillance capitalism,” institutions and corporations steer and control users’ choices, preferences, behaviors, and experiences—with social media algorithms, wearable continence devices, hyper-personalization via targeted advertising and behavior prediction technologies, apps designed to provide “behavioral nudging,” etc.—proactively eroding users’ self-control and self-knowledge.

Chapter by Chapter Walkthrough

This dissertation consists of nine chapters and a “caesura,” a pause. Immediately following the introduction, **Chapter 2, ON PUBLICS**, will provide context for plastic publics and shaping of publics through control. This chapter theorizes the social production of publics—first by engaging work on publics by Søren Kierkegaard, who wrote in “The Present Age”:

The public is an idea, which would never have occurred to people in ancient times, for the people themselves en masse in corpora took steps in any active situation, and bore responsibility for each individual among them, and each individual had to personally, without fail, present himself and submit his decision immediately to approval or disapproval. When first a clever society makes concrete reality into nothing, then the Media creates that abstraction, “the public,” which is filled with unreal individuals, who are never united nor can they ever unite simultaneously in a single situation or organization, yet still stick together as a whole. The public is a body, more numerous than the people which compose it, but this body can never be shown, indeed it can never have only a single representation, because it is an abstraction. Yet this public becomes larger, the more the times become passionless and reflective and destroy concrete reality; this whole, the public, soon embraces everything.⁴⁵

The chapter then considers Tarde’s “proto-affect”⁴⁶ concept of social contagion alongside Habermas’ conceptualization of the public sphere to chart the evolution of plastic publics.

Chapter 3: METHODS FOR PLASTIC PUBLICS considers a methodological framework for plastic publics. This dissertation is a theoretical and empirical, qualitative analysis of plasticity. Here, “methodology” refers to the philosophical assumptions and strategies I employ as part of my empirical data gathering and analysis. Rather than address the various methods used in this dissertation in a way that effectively dismembers it, in this chapter I outline the evolution and entangled trajectories of transdisciplinarity and post qualitative inquiry that guide this

dissertation's methods and link it to the larger theoretical control project outlined in this dissertation.

Chapter 4: EXPANDED CONTROL DIAGRAM is a short chapter that introduces the “expanded control diagram,” the genealogy of control that took shape in Foucault, Deleuze and beyond, into neuropower, neuropolitics, noopolitics, and neuroculture (with attention to the modulation of the neoliberal brain). The extended control diagram is elaborated in the following chapters.

In **Chapter 5, REREADING FOUCAULT: CONTROL IS LEARNING/LEARNING IS CONTROL**, close attention is given to one of Foucault's models for the production of docile bodies in *Discipline and Punish*, the early nineteenth-century-era “mutual improvement school” of Joseph Lancaster, in which panoptic control is refigured as a learning and teaching machine architected by instant affective feedback.

In **Chapter 6, A CLASSICAL BEHAVIORIST TWIST TO SOCIAL CONTROL**, we explore the formative role of classical behaviorism in the control diagram. Behaviorism is animated by a deep belief in human plasticity. In this chapter, we discuss how classical behaviorism moved plastic potential from the public realm of education to the private world of corporations, public relations, and marketing with the aim of transforming *the behaviors of groups of people*.

Chapter 7, CYBERNETICS: FROM GUIDANCE SYSTEMS TO PSYCHIATRY, SETTING THE FOUNDATION FOR CONTROLLING MODERN PUBLICS concerns mid-twentieth-century technological advances in communication and control via the emergent science of cybernetics. In this chapter, we look at how experimental forms of behaviorism came to be reconceptualized with the aid of developments in experimental psychology and neuroscience provided by cybernetics. The mapping of behaviorist goals and insights from experimental and applied psychology and neuroscience onto cybernetic techne was made possible through learning systems and social technologies based on reinforcement from control loops, or *feedback relations*. In the process, the cultural *longue durée* of the past seventy or so years, cybernetic-capitalist forms of control—involving rapid, continuous, networked connectivity with responsive communicative technologies—mutated the relational field of sensibility, emotions, and affects. Increasingly, this

process involves the automated intelligence of machines in the social production of society. This dissertation expands the diagram of control and centers it around the emergent transdisciplinarity of cybernetics, neurophysiology, and psychiatry.

Chapter 8, SOFT MACHINES WITH PLASTIC POTENTIAL: WILLIAM S. BURROUGHS AND THE CONTROL DIAGRAM, examines William S. Burroughs’ agitation of the viral systems of language, control, and subjectivity as a counterforce to what he referred to as collective “brain-rape” by the state’s disinformation and mind control systems—created by a network of computer scientists, mathematicians, neuroscientists, psychologists, and behaviorists—as well as the mutational and metabolic qualities of control in postwar cybernetic culture. Burroughs’ influence on control theory—its resonances in Deleuze and post-Deleuzean efforts to expand this diagram of power—is underestimated and underexplored, and this chapter is a contribution to the effort begun by Sylvère Lotringer, with the “Schizo-Culture” colloquium in 1975, to connect and create space to discuss concepts of power and resistance central to the various countermovements coursing through the NYC experimental artistic underground and May 1968 struggles in Paris.

Chapter 9: DISCIPLINE, CONTROL, AND THE PLASTIC SOCIALIZATION OF INCONTINENCE is this dissertation’s conclusion, in which I briefly revisit the chapters, ‘connect the dots,’ and gesture toward the ongoing research this project is pursuing. To query what are the stakes for plastic publics, I look at the classical problem of incontinence—as discussed by Plato in *The Republic* and Aristotle in his *Nichomachean Ethics*—and reconfigure the debate in terms of contemporary theories of communication and control. Control is often thought of in Foucault’s disciplinary sense, but what we are seeing in the last decade or so, with the proliferation and omnipresence of social networking technologies and now with AI (artificial intelligence) and AGI (artificial general intelligence), is that control can also be the opposite: the unwinding of self-regulation and spiraling toward incontinence. I argue in this concluding chapter that what we are seeing now is a far more dangerous aspect of incontinence as an end in itself.

The **Caesura** is currently placed after **Chapter 3**, where it gestures towards the Methods chapter and can be considered as part of the methodology of this project, but it can be positioned anywhere it is needed. It is an optional exercise in “deep engagement” with some theorization of

rhythmanalysis provided by Henri Lefebvre, and it uses Alvin Lucier's *I Am Sitting in a Room* as its 'thinking-with piece.' It is offered in the spirit of William Burroughs' "Do Easy" (see **Chapter 8**)—which here, is explicitly about transforming external pressures and noise into a method for paying attention to becoming more present and attuned to experience. This kind of somatic practice, involving deep attentional 'work' that is both environmental and embodied, is increasingly used in restorative and transformative justice processes to access, address, heal, and transform embodied traumas. This Caesura is about learning; in particular, learning the skill of deep attention (to both environmental and embodied rhythms) and its interconnectedness with plasticity. By developing this skill, individuals can better discern and create new forms of resistance to the pervasive forms of neuropower and neurocapitalism that increasingly dominate our attentional, neuroplastic, and imaginal capacities.

Notes

¹ Excerpted from Moss Hart's 1943 Broadway play, *Winged Victory*, which dramatized for a mass audience the psychological testing enlisting cadets were subjected to, making them participate in an "ordeal for every person in the audience," which one critic expressed doubt "if many passed." Was also developed into a Hollywood film in 1944.

² "Neurocapitalism" is the terminology that, for example, Tony D. Sampson, Giorgio Grizzotti, and others use to describe this contemporary phenomenon—but it is by no means a widely used or concretely defined term. Broadly speaking, the term refers to the commodification and exploitation of neurological processes and technologies within capitalist systems and the kinds of immaterial labor that are required with these new technologies and systems, and mostly importantly, how these factor into control and control systems for publics. In this sense, as it is used here, also see the work of: Sampson, Grizzotti, Yuk Hui, Warren Neidich, Matteo Pasquinelli, Tiziana Terranova, Brian Massumi, Franco Berardi, etc. Neurocapitalism is not the same as "cognitive capitalism," which signifies the historical passage from industrial forms of labor and capital to more knowledge-based and immaterial forms and a new paradigm or structure for a neoliberal economy.

³ David Lyon, "Surveillance Culture: Engagement, Exposure, and Ethics in Digital Modernity," *International Journal of Communication* 11 (2017): 824–842.

⁴ Samuel Taylor Coleridge, *Biographia Literaria or Biographical Sketches of My Literary Life and Opinions*, Vol. 1, second edition (London: William Pickering, 1847/1817),

https://www.google.ca/books/edition/Biographia_Literaria/3z_YDz5PBL4C?hl=en&gbpv=1.

⁵ Victoria Pitts-Taylor, *The Brain's Body: Neuroscience and Corporeal Politics* (Durham and London: Duke University Press, 2016), 17.

⁶ Byung Chul-Han, *Psychopolitics: Neoliberalism and New Technologies of Power*, trans. Erik Butler (London and New York: Verso, 2017), 1.

⁷ Giorgio Grizzotti, *Neurocapitalism: Technological Mediation and Vanishing Lines* (Colchester/New York/Port Watson: Minor Compositions, 2019), 169.

⁸ In 2002, political theorist William E. Connolly coined the term "neuropolitics" in his book *Neuropolitics: Thinking, Culture, Speed*, where it is defined as: "the politics through which cultural life mixes into the composition of body/brain processes. And vice versa. The new neuroscience, while needing augmentation from cultural theory, encourages students of culture to attend to the layered character of thinking; it also alerts us to the critical significance of *technique* in thinking, ethics, and politics." See William E. Connolly, *Neuropolitics: Thinking, Culture, Speed* (Minneapolis and London: University of Minnesota Press, 2002), xiii.

Tony D. Sampson talks extensively about neuropolitics across his work and several platforms, for example: on his blog, *Virality*; in his books *A Sleepwalker's Guide to Social Media* (2020) and *The Assemblage Brain: Sense Making in Neuroculture* (2016); in several interviews (e.g., with Rizosfera, "Experience Capitalism" and "Digital Neuroland"), and in numerous talks and articles.

⁹ Maël Montévil, Bernard Stiegler, Giuseppe Longo, Ana Soto, and Carlos Sonnenschein, "Anthropocene, exosomaticization and negentropy," *Internation/Geneva2020*, <https://internation.world/arguments-on-transition/chapter-1/>.

¹⁰ Catherine Malabou, *What Should We Do with Our Brains*, trans. Sebastian Rand (New York: Fordham University Press, 2008), 5.

¹¹ Thomas Wormald, *Sculpted Selves, Sculpted Worlds: Plasticity and Habit in the Thought of Catherine Malabou*, MA diss., the University of Western Ontario, 2014, <https://ir.lib.uwo.ca/etd/2398>. Wormald takes a more philosophical route to plasticity here.

¹² Mr. McGuire, to recent college graduate Benjamin Braddock in *The Graduate* (1967).

¹³ Roland Barthes, "Plastics," in *Mythologies*, trans. Annette Lavers (New York: Hill and Wang, 1956), 97–100.

¹⁴ Jeffrey Meikle, *American Plastic: A Cultural History* (New Brunswick, NJ: Rutgers University Press, 1995), xiv.

¹⁵ Cammie McAtee, "Taking Comfort in the Age of Anxiety," in *Atomic Dwelling: Anxiety, Domesticity, and Postwar Architecture*, ed. Robin Schuldenfrei (London and New York: Routledge, 2012), 10.

¹⁶ Mario Carpo, *The Alphabet and the Algorithm* (Cambridge, MA and London: The MIT Press, 2011), 105.

¹⁷ Meikle, *American Plastic*, 244–245.

¹⁸ Meikle, *American Plastic*, 277. The specific theorizing Meikle is referring to here are: Umberto Eco's notion of plasticity, particularly in *The Open Work* (1962), and Jean Baudrillard's concepts of the hyperreal and hyperreality in *Simulacra and Simulations* (1981).

¹⁹ William James, *The Principles of Psychology*, Vol. 1 (New York: Henry Holt and Company, 1918), 105, <https://www.gutenberg.org/cache/epub/57628/pg57628-images.html>.

²⁰ For a book that provides an essential survey of this body of work, see Catherine Malabou, *Plasticity: The Promise of Explosion*, ed. Tyler M. Williams (Edinburgh: Edinburgh University Press, 2022). The apt description of Malabou's body of work is from Ian James' introduction to the book. Elsewhere in this book, Malabou discusses plasticity as a "plurality"—"of fields, of meanings, and of empirical occurrences" (p. 309).

²¹ Malabou, *What Should We Do with Our Brains*, 1. And for Marx, the quoted material appears in the second paragraph of section 1 of *The Eighteenth Brumaire of Louis Napoleon* (1851–1852) and reads: "Men make their own history, but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past. The tradition of all dead generations weighs like a nightmare on the brains of the living." See <https://www.marxists.org/archive/marx/works/download/pdf/18th-Brumaire.pdf>.

²² Malabou, *What Should We Do with Our Brains*, 66.

²³ Marc Jeannerod, "Introduction," in *What Should We Do with Our Brains*, xii.

²⁴ Malabou, *What Should We Do with Our Brains*, 35.

²⁵ Malabou, *What Should We Do with Our Brains*, 95.

²⁶ Hugh Silverman, "Malabou, Plasticity, and the Sculpturing of the Self," *Concentric: Literary and Cultural Studies* 36, no. 2 (September 2010): 96 and 94.

²⁷ Gilles Deleuze, "Conversation with Toni Negri," [orig. published in *Futur Antérieur* (Spring 1990)], *Negotiations, 1972–1990*, trans. Martin Joughin (New York: Columbia University Press, 1997), 176.

²⁸ Malabou, *Plasticity*, 9.

²⁹ Wormald, *Sculpted Selves, Sculpted Worlds*, 72. Minor modification.

³⁰ Malabou, *What Should We Do with Our Brains*, 67.

³¹ Richard Sennett, "The Search for a Place in the World," in *Architecture of Fear*, ed. Nan Ellin (New York: Princeton Architectural Press, Inc., 1997), 69.

³² Han, *Psychopolitics*, 1.

³³ Han, *Psychopolitics*, 61.

³⁴ The "emotional brain" is the term used by Joseph Ledoux, whom Malabou draws upon extensively in her work. I don't think it has anything to do with Minsky's project but would be interesting to engage them in the future.

³⁵ Aldous Huxley, *Brave New World Revisited* (New York: Harper & Row, 1958), https://archive.org/details/Brave_New_World_Revisited.

³⁶ Quoted in Konrad Becker and Felix Stadler (eds.), *Digital Unconscious: Nervous Systems and Uncanny Predictions!* (Brooklyn: Autonomedia, 2021), 11.

³⁷ Phillipp Sarasin, "The Body as Medium: Nineteenth-Century European Hygiene Discourse," trans. Brian Hanrahan, *Grey Room* 29 (Winter 2008): 51.

³⁸ Sarasin, "The Body as Medium," 54.

³⁹ See Franco "Bifo" Berardi, "The Digital Explosion of the Unconscious," in *Digital Unconscious: Nervous Systems and Uncanny Predictions!*, ed. Konrad Becker and Felix Stadler (Brooklyn: Autonomedia, 2021), 57.

⁴⁰ Meikle, *American Plastics*, 279.

⁴¹ Becker and Stadler, *Digital Unconscious*, 9.

⁴² Emily Martin, "Mind/Body Problems," *American Ethnologist* 27, no. 3 (2000): 578–579.

⁴³ Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London and New York: Verso, 2014), 46–47.

⁴⁴ Han, *Psychopolitics*, 11.

⁴⁵ Søren Kierkegaard, *The Present Age and Of the Difference Between a Genius and an Apostle*, trans. Alexander Dru (New York: Harper Torchbooks, 1962), <https://archive.org/details/presentageofdiff00kier>.

⁴⁶ Rizosfera, *Digital Neuroland: An Interview with Tony D. Sampson*, October 2017, https://monoskop.org/images/e/ef/Digital_Neuroland._An_interview_with_Tony_D._Sampson.pdf.

ON PUBLICS

It is above all on the habits of individuals that industry must count; but their passions and their whims, whose proportion is growing in our age of social crisis, are like nurseries for the new habits of tomorrow. —Gabriel Tarde, “Economic Psychology” (1902)¹

If the element of distance that is constitutive of the public sphere is eliminated, if its members are in too close touch, the public sphere is transformed into a mass.
—Hans Paul Bahrdt, *Industriebürokratie* (1958)²

There are roughly two centuries of theory framing our current conception of what are *crowds*, what are *publics*, and what motivates *mass* or *collective behavior*. For a moment, let’s not think about semantic distinctions between crowds and publics, nor the unambiguous ideologies they are usually framed within (crowd = morally bad, public = civically good; or crowds = anarchic potential of difference, publics = normative and state-sanctioned classifications), or even the different subcategories of publics that have emerged in the wake of the twentieth-century public sphere: elite, intermediary, subaltern, counterpublics, nonpublics, public spheres of production, non-state public spheres, etc.³ Crowds and publics are uncodified and have managed to propagate without a clear conceptual vocabulary. As Paolo Virno remarks about the similar “problem” of the multitude, this is a good thing.⁴

Publics are uncodified, and necessarily so. Margreth Lünenborg exhorts: “Any adequate understanding of publics needs to take into account its fluid, unstable, fragile, and dynamic character.”⁵ Publics, crowds, and masses give and receive form through mediated relations between individuals, between individuals and groups, and between individuals, groups, and worlds of difference created by technologies that increasingly mediate relations but are also form-giving. Publics are “networked,”⁶ “performative,”⁷ and “affective.”⁸ Publics, as Michael Warner observed in *Publics and Counterpublics*, are everywhere, and it’s “impossible to imagine what social life

without publics would look like.” Indeed, the very idea of a public “is constitutive of a social imaginary.”⁹

To introduce publics with these ideas in mind, I will use a sociotechnological lens to present late-nineteenth-century theories of crowds and publics—often treated as two distinct Cartesian entities of instinctual economy and rational regime—to consider the administrative society’s public sphere as an ideal of human rationality and embodied cognition, and later, as *affectual compositions*—in which neural techniques and nooconduits optimized by the latest persuasive technologies replace mobile reality bubbles with a metaverse—a spatiality thoroughly contaminated with capitalism, desire, emotion, mediation, anxiety, and contagion.¹⁰ This history considers the formative role of Søren Kierkegaard’s early conceptions of socialized subjectivity and group think; and, it critically compares French social psychologist Gabriel Tarde’s¹¹ notions of public social contagions and the virality of affects and sensibilities with German sociologist Jurgen Habermas’ invention of the public sphere.¹² Both Tarde and Habermas’ concepts of publics have heavily imprinted upon how we make sense of contemporary social networks and how we will come to understand what constitutes plastic publics.

Becoming Public

To go unnoticed is by no means easy. To be a stranger, even to one’s doorman or neighbors. If it is so difficult to be ‘like’ everybody else, it is because it is an affair of becoming. Not everybody becomes everybody/everything [*tout le monde*], makes a becoming of everybody/everything. This requires much asceticism, much sobriety, much creative involution. —Gilles Deleuze and Félix Guattari, *A Thousand Plateaus* (1980)¹³

I created various personalities within myself. In order to create, I destroyed myself; I have externalized so much of my inner life that even inside I now exist only externally. —Fernando Pessoa, *The Book of Disquiet* (1982)¹⁴

Nineteenth-century Danish evangelical existentialist Søren Kierkegaard was an early critic of mass behavior, group think (what he called the “untruth of crowds”), and the power of the press to shape public thought into a noosphere by the intensity, velocity, extensibility, and detached user experiences made common by the economy of new media (the daily press and its publics)—what he regarded as the “hopeless abstraction of leveling” in the present age. In *The Present Age*, he

explains that “for leveling properly to come about a phantom must first be provided, its spirit, a monstrous abstraction, an all-encompassing something that is a nothing, a mirage—this phantom is the public”¹⁵; and, he warns that at the expense of the present age’s extensivity, “the prerequisite for acting more intensively is the thorough kneading of reflection.”¹⁶ Reflection is not just a matter of intelligence, but of emotional and intuitive capacities to make sense, to learn how to learn, to respond to things in an ethical way, to have and to make deep commitments. Moreover, it operates at the level of infra-activity that radiates as affective contagion.¹⁷

In *A Thousand Plateaus*, Gilles Deleuze and Félix Guattari use Kierkegaard’s “knight of the faith” to explain the ethico-aesthetics of becoming-imperceptible for existence amidst the “nihilistic leveling,”¹⁸ abstracta, generalizations, and zones of indistinction created by communicative capitalist assemblages:

‘Eliminate all that is waste, death, and superfluity,’ complaint and grievance, unsatisfied desire, defense or pleading, everything that roots each of us (everybody) in ourselves, in our molarity. For everybody/everything is the molar aggregate, but *becoming everything* is another affair, one that brings into play the cosmos with its molecular components. Becoming everybody/everything (*tout le monde*) is to world (*fair monde*), to make a world (*faire un monde*). . . . In other words, to find one’s proximities and zones of indiscernibility.¹⁹

In *The Present Age*, Kierkegaard addresses the problem of the public through a reflection on a literary work anonymously penned by a Danish woman author (Baroness Thomasine Christine Gyllembourg-Ehrensward,²⁰ whose own nom de plume was “The author of *A Story of Everyday Life*”), her body of work as a whole, and a cultural critique of present-day social norms. In discussing this author’s observations of the psychosocial realities of the day, Kierkegaard analyzed the abstraction and leveling of human sensibility, which in his view was the constitutive factor of his “present age” and the unfortunate result of the impassionate privileging of rational reflection at a distance as a sociotechnical overcorrection of the previous age’s tumultuous revolutions. He writes: “Whereas a passionate age accelerates, raises up and overthrows, elevates and debases, a reflective apathetic age does the opposite, it stifles and impedes, it levels. Leveling is a quiet, mathematical, abstract enterprise that avoids all agitation . . . leveling at its peak is like a deathly

stillness in which a person can hear himself breathe, a deathly stillness in which nothing can rise up but everything sinks down into it, impotent.”²¹

Kierkegaard engages his reader to imagine not just the incorporeal or abstract qualities of the age, but also its material conditions: “Suppose that such an age has invented the swiftest means of transportation and communication, has unlimited financial resources: how ironic that the velocity of the transportation system and the speed of communication stand in an inverse relationship to the dilatoriness of irresolution.”²² The result of which, Kierkegaard contends, is that the present age is the age of anticipation, an age without passion, an age in a prison of reflection, in which subjectivity has become “lost in the objectivity of public opinion and mass movements.”²³ Nevertheless, “inasmuch as the present age is involved in the difficulty of becoming, this is still only in the sphere of reflection, and for that reason it also does have the uncertainty of hope.”²⁴

Indeed, in 1838, American inventor Samuel Morse anticipated it would not be too long before “the whole surface of this country would be channeled for those nerves which are too diffuse with the speed of thought, a knowledge of all that is occurring throughout the land; making in fact one neighborhood of the whole country.”²⁵ For Kierkegaard, the world sped up by communication was transforming all social life with its disproportionate scales of time, space, proportion, and reciprocity/reflexivity into an age of abstractions via publicity, anticipation, and trivialization. For the public “is an abstraction . . . exists only *in abstracto* . . . is a phantom that does not allow any personal approach . . . [and] is a kind of colossal something, an abstract void and vacuum that is all and nothing.”²⁶ Kierkegaard wrote disparagingly of the public, particularly its indolence, superficiality, and craven appetite, “that sluggish crowd which understands nothing itself and is unwilling to do anything, that gallery public, now seeks to be entertained and indulges in the notion that everything anyone does is done so that it may have something to gossip about.”²⁷ In another description, Kierkegaard explained how social leveling by abstraction would do the work social upheavals could not: “The public is the actual master of leveling, for when there is approximate leveling, something is doing the leveling, but the public is a monstrous nonentity.”²⁸

He worried about the tendency of a leveling abstraction like “the public”—a *nonhuman nonentity* which is expressed as *the generality of formlessness*; it is *an immense something or other*²⁹—to jam the distinction between what is private and what is public, what is social and what

is intimate, what is significant and what is not, what is permissible and what is not, what is and what is nullified by publics:

eventually human speech will become just like the public: pure abstraction—there will no longer be someone who speaks, but an objective reflection will gradually deposit a kind of atmosphere, an abstract noise that will render human speech superfluous, just as machines make workers superfluous. In Germany there are even handbooks for lovers; so it probably will end with lovers being able to sit and speak anonymously to each other. There are handbooks on everything, and generally speaking education soon will consist of knowing letter-perfect a larger or smaller compendium of observations from such handbooks, and one will excel in proportion to his skill in pulling out the particular one, just as the typesetter picks out letters.³⁰

Kierkegaard wrote in a relatively late work, in 1846: “Existing is an art. The subjective thinker is aesthetic enough to give his life aesthetic content, ethical enough to regulate it, and dialectical enough to penetrate it with thought.”³¹ Disconnection and internalization are necessary for the constitution of Kierkegaard’s subjective thinker. Aesthetic content, ethical self-regulation, and dialectical thought emerge from a deep inner reserve untapped by the world’s social, ethical, and cognitive challenges and demands. He worries, in particular, about the epidemic of ethical detachment that comes with the leveling of the public—and the media’s shaping of what we are now calling “attention economies” that ontologically diffuse and are passively absorbed and remediated by the public as “a mere abstract fusion . . . where individual reflection and personal initiative are obstructed if not annihilated.”³²

Two years earlier, in *The Concept of Anxiety* (1844), he described humans as unfinished architectures. Our lives are processes of self-creation that fill us with anxiety about the possibilities we may cultivate within our developing selves, so we turn outward to the social scaffolding provided by crowds and publics to evade becoming ourselves. We can’t begin to know ourselves because we fear the truths we may discover by going inward to commune with ourselves—and, importantly for Kierkegaard, with God—so we seek the opinions of others and model ourselves on *behaviors we observe* to learn who we are.

Bear in mind, the same year Kierkegaard’s book was published the first telegraph line was constructed with state funding and quickly privatized by corporations. This communication

technology is credited by communication theorist James Carey—incidentally, the scholar whose notions of “communication as culture”/“communication and culture” must play some role in defining the PhD program I will hopefully be graduating from shortly—with changing “the nature of language, of ordinary knowledge, of the very structures of awareness.”³³ Indeed, it materially transformed verbal communication, in particular distance and mass communications, into a more semaphoric system.

Morse’s device literally reads a visual language of dots, dashes, and spaces to transmit and receive messages. Communication via the electric telegraph was transmitted via electronic pulses between networked machines, which required a continuous current to operate. The first means for continuous, rapid, long-distance, technologized communication, the electronic telegraph universalized the world in unprecedented ways. By making information networked and communication a huge collaborative enterprise, it radically altered the nature of getting things done. Its new (at the time) hypermediation provided, over time, for subjectivity *allowing itself* to become detached and put into circulation.³⁴ It radically transformed the very notion of what it means to assemble as a public because the telegraph compressed the spatial and temporal boundaries of human interaction in—to use an electric metaphor—shocking ways that all point to the military origin of the word shock, shock being synonymous with or constituent to the incessant optimization of communication technologies and the symptomatic breakdown of human psychology and social life into public traumas. Not ironically then, the first public long-distance message sent out by Samuel Morse in May 1844 was, “What hath God wrought?”

In the early years of the telegraph’s introduction—as new communicative techniques were being invented, learned, and behaviors adapted—Kierkegaard wrote *Christian Discourses* (1848), in which he likens the modern crowd to a hall of mirrors: “For it seems indeed as if, in order to be himself, a man must first be expertly informed about what the others are, and thereby learn to know what he himself is—in order then to be that. However, if he walks into the snare of this optical illusion, he never reaches the point of being himself.”³⁵ This subject is doomed to the “phony subjectivity” described by the “Viennese Kierkegaard” Karl Kraus in *The Last Days of Mankind*, which *allows itself* to become detached and put into circulation. “The individual,” Kierkegaard

mused in his journal later that year, “is the category through which . . . our age, our race and its history must pass.”³⁶

Without realizing it—or at least with great resistance—Kierkegaard’s individual had become an interface through which knowledge, information, and experience must be transmitted en route to other individuals in a rapidly growing communications network. “It is the divine side of man, his inward action which means everything, not a mass of information; for that will surely follow and then all that knowledge will not be a chance assemblage, or a succession of details, without system and without a focusing point. . . . It is useless for a man to determine first of all the outside and afterwards fundamentals. One must know oneself before knowing anything else.”³⁷ It was, for Kierkegaard, a painful revelation of to what little degree we can call thinking, reasoning, and emotion actually “ours,” and not produced socially and culturally within networks. Kierkegaard’s apprehensive theory of what happens to individual subjectivity in publics, its transformation into a mutant “new, mentally unified organism,” was formalized and scientized by crowd theorists Gabriel Tarde, Gustave Le Bon, Scipio Sighele, et al. in the years that followed.

The Historical “Era of Crowds” Reconceptualized as the “Era of Publics”

Scholarly attention to crowds and publics first gained currency in the late-nineteenth century among Italian and French sociologists, psychologists, and criminologists trying to make sense of mass culture.³⁸ But, as George Rudé argues in his history-from-below analysis of the crowd in the French Revolution, these first-generation theorists went about it in the wrong way. By abstracting the people responsible for it into a homogenous mob, a mass, a crowd, a collective body without a head, they lose sight of the contingent and diverse contexts of social compositions, how they are created from subjectivities comprising many different experiences and needs.³⁹ This also characterizes the way early social theorists analyzed the human element of the labor movement, urbanization, and its “leveling anonymity” (popularized by German sociologist Georg Simmel), as well as the post-revolutionary political power of “the masses.”⁴⁰

That is, overwhelmingly, first-generation theorists of collective behavior identified the period as the “era of crowds,”⁴¹ mass collectivities of people who constitute a singular mindlessness, yet whose impulses and motivations cannot be trusted. Crowds are governed by a

spontaneously generated *instinctual economy* that simultaneously threatens uncontrollability and yet is vulnerable to influence, subjectivization, divisions.

Crowds and masses have spatial limitations. Or rather, these theorists focused on physical proximity and contact in public space to explain early crowd phenomena. Early capitalism, through its new communication and transportation technologies, reshaped, expanded, and mobilized the field of public space; it became “free-floating.”⁴² When Gabriel Tarde first argued in 1898 that it was the era “of the public or *of publics*,” it was indeed “a very different thing.”⁴³ He wrote: “The crowd is the social group of the past . . . it is incapable of extension beyond a limited area But the public can be extended indefinitely, and since its particular life becomes more intense as it extends, one cannot deny that it is the social group of the future.”⁴⁴ The crowd is a local phenomenon, a “collection of psychic connections produced essentially by physical contact,” and the public is so radically extended that it “cannot exist without certain technological requisites, some means of communication that serve to bind the members of a public together.”⁴⁵

In 1901, in a short essay on the phenomena of crowd and public, he wrote, “the invention of printing has caused a . . . type of public to appear, one which never ceases to grow and whose indefinite extension is one of the most clearly marked traits of our period.”⁴⁶ Tarde proposed that “the newspaper took ‘crowds’ off the street and transformed them into ‘publics’”—through practices of reading, forming opinions, coming together to discuss and, ultimately, act on them.⁴⁷ He understood this public “as a purely spiritual collectivity . . . whose cohesion is entirely mental.”⁴⁸ The telegraph provided the technological means to transmit news, almost instantaneously, around the world, creating a new type of knowledge commons. In the distanced yet instant connections provided by the circulation of mass media, “*currents of opinion* take shape.”⁴⁹ For Tarde, there was no word in ancient Greek or Roman that could adequately convey such a thoroughly modern concept of publics and so he barred the *polis* and the *agora* as models. This public needed to be invented.

Contagion and Communication

As Elias Canetti wrote in *Crowds and Power*: “The crowd always wants to grow.”⁵⁰ Nineteenth-century social psychologist and preeminent “crowd theorist” Gabriel Tarde’s focus on

sociotechnological transformations in long-distance communication and transportation at the time of his writing include the proliferation and mass circulation of newspapers, the development of the telegraph, mass transit in cities and the railroads connecting major cities that allow for previously unimaginable mental proximity across time and space.⁵¹ He first observed this as the social world's division into groupings determined entirely by differences in “states of mind in the process of perpetual mutation” that superimpose themselves—“visibly and effectively”—on divisions along economic, religious, aesthetic, political and “all kinds of professional sects.” Once mobilized into publics, these social groups have the capacity to “come apart, reform and transform themselves with a rapidity that would have stupefied our ancestors.”⁵²

Social contagion meant that affective charges of proximal physical contact and interaction could now be “felt from a distance under the influence of events which give all minds . . . the characteristics peculiar to crowds.”⁵³ With this subtle shift from physical proximity to minds in conversation, crowds could now be controlled not only by policing movements (by enclosing bodies in disciplinary spaces or “molds”) but also by coercing behaviors so that they could be contained in “open-air prisons” (Adorno) of their own decision-making processes, belief systems, and other such coerced constitutive control systems.

Social contagion is an “epidemiology of ideas,” affects, attitudes, or variations in collective behavior that spread through social contact and crystallize via imitation into new forms, codes, and practices.⁵⁴ Gustave Le Bon is often credited for being the first among the crowd theorists to use the medical term ‘contagion’ in a psychosocial sense, in *Psychologie des foules* (1895), to indicate the dissemination of irrational behavior. However, around the same time, Tarde used it to discuss the transmission of affects.

Tarde was influenced by French historian Hippolyte Adolphe Taine’s use of ‘contagion’ throughout his six-volume study of the modernization of France, *The Origins of Contemporary France* (1878–1893). In it, Taine describes how contagion operates *as currents* of new ideas that can emanate from a single influencer (in this particular case, Voltaire), rapidly spread through a virtual informational collectivity, and through the circulation and exchange of opinion and sentiments, become belief systems.⁵⁵ For Tarde, the laws of imitation are foundational to all social relations; all social relations are essentially imitative.

It is an evolutionary principle that we learn by imitation. For decades, researchers have insisted that imitation is the most important principle in social learning [e.g., Jean Piaget (1962); Albert Bandura (1977)].⁵⁶ Reports on imitative behavior in infants have shaped much of this discourse—particularly regarding what we can directly observe of the acquisition of voluntary actions (motor skills, e.g., tongue protrusion) and behaviors (cognitive and social skills, e.g., language). Recently, it has been argued, “imitative behaviour appears to emerge out of the infant’s acquisition of different kinds of knowledge and motor, cognitive, and social skills.”⁵⁷ Marcel Mauss called these “techniques of the body,” inter-mental *habitus*’ that we acquire from social interactions and without thinking about them, adapt and feed back into our environments in dynamic micro-relations of collective activity that compose publics.

Tarde specified that we never imitate individuals, we imitate *affects*, which are precognitive flows of beliefs and desires that traverse individuals. Affects serve as the connective tissue of collective activity: assemblages, becomings, etc. Affects propel us into movement; they are what push us to act and change our relations with the world.⁵⁸ In sociologist Christian Borch’s view, Tarde’s work advances a comprehensive “crowd semantics”—movements between mass, crowd, public—which emphasize the highly contingent character of collective social life in modernity.⁵⁹ In “The Exclusion of the Crowd,” Borch discusses crowd theory’s emergence during a period of geopolitical uncertainty and instability, in which a heightened collective anxiety about how to manage the contingencies that work against presumed rationality and order assembled as a “dark and destructive side” of modern society. This is perhaps why Tarde’s concept of social plasticity emerged at the same time, and was eclipsed by, Emile Durkheim’s concept of “social facts.”⁶⁰ Social facts is a cultural inscription model in which collective representations (status quos) and stable statistics operate with little regard for contingency. They are products of repetition, not processes. That is, they are boundary conditions, contexts, and predetermined determinations (e.g., norms) that are “exterior to the individual and imposed on him through a sort of constraint.”⁶¹ There are plenty of theories as to why Durkheim’s theory gained dominance in the new field of sociology, but in sum, Durkheim’s model appealed to a broader social need for the scientific rationalism of the time—with the new contemporary mass mindset feeding back into anxiety about mass phenomena—which sought social stability through control.⁶²

Durkheim's model involves imitation too, but it is based on description, observation, and mimesis. In his schema, individuals are endowed with super-rational, external-oriented, norm-conforming behaviors that determine their assembly as groups. In contrast, with Tarde, imitation "reproduces its own stimulus"; it is primarily "sociological, plastic."⁶³ Tardean crowd semantics illustrates how individual minds are continuously altered in communication between people and members of society and collaborate—mostly unknowingly—in creating and shaping their social order. Tarde writes, and even repeats as a refrain in *The Laws of Imitation*: "Society is imitation and imitation is a kind of somnambulism."⁶⁴

In *The Laws of Imitation*, Tarde describes the shaping of a literary public whose growth is tethered to the circulation and sharing of ideas and beliefs. At the same time, this is an underinformed public, largely unaware that most of their conscious choices are hypnotic, mimetic emanations that modulate attention and behavior for social control and obedience. Tarde's original contagion theory was firmly located in these insensible thresholds with no 'absolute separation' or 'abrupt break' between the voluntary and the involuntary, between the conscious and the unconscious, of social, relational mutualism.⁶⁵

As Tarde observed with the creation of "the public" or "publics," the public sphere was created by a rapidly developing market economy and, largely owing to the speed and breadth of its expansion, was "caught up in a process of decomposition" from the late-nineteenth century onward.⁶⁶ With industrialization and its rapid technological advances, the public sphere as a sense-making organ fails under the combined strain of mass communication and its mass cultural production. Despite this, theories of a universal idealized intelligent public or public sphere haunt/informs our understanding on the role, meaning, shape, context, behaviors, etc. of contemporary networked publics.

Habermas' Public Sphere

The main idea that undergirds this thesis' take on publics is that they are not *pro forma* social structures, but rather creative communicative assemblages whereby subjectivities form, undergo constant modulation, and engage in dynamic psychosocial processes of becoming by contagion, which happens at a level that is not always cognitively perceptible.⁶⁷ I will now present the

argument that Jurgen Habermas is looked to, incorrectly, to support theories of a universal idealized intelligent public or public sphere. In fact, in his introduction to *The Structural Transformation of the Public Sphere* (1962), Habermas describes “public” and “public sphere” as imprecise terms that require ongoing reconsideration.

Etymologically, Habermas draws on elements from the Old French meaning for *public*, “open to general observation” (c. 1300), from the Latin *publicus* “of or belonging to the people,” or “common, general, public”; and *Offentlichkeit* [public sphere] which variously means “the public,” “the public sphere,” and “publicity.”

The opening sentence of the author’s preface to *The Structural Transformation of the Public Sphere* states the specific type of public sphere that will be investigated and its trajectory: the emergence, transformation, and disintegration of the “bourgeois public sphere” [*bürgerliche Offentlichkeit*]. In the following paragraph, Habermas reasserts the historical specificity of the type of public sphere his text will engage:

We conceive bourgeois public sphere as a category that is typical of an epoch. It cannot be abstracted from the unique developmental history of that ‘civil society’ [*bürgerliche Gesellschaft*] originating in the European High Middle Ages; nor can it be transferred, idealtypically generalized, to any number of historical situations that represent formally similar constellations.⁶⁸

The specificity is also cultural. Throughout his analysis, Habermas addresses lateral views of the bourgeois public sphere as it emerged in France (as the “petit bourgeois”); the ‘liberal’ public sphere that emerged in England; Germany’s own *bürgerliche Offentlichkeit*; and the privatized public sphere that emerged with early capitalism in the US. He also provides the Hellenic *res publica* as a classical model for the public sphere as a “realm of freedom and permanence” in which discussions among citizens “were made topical and took on shape” and “everything become visible to all.”⁶⁹ In Ancient Greece, *biopolitikos* [public life] was situated in the *polis* [the fully developed city-state] and consisted of what went on in the *agora* [marketplace] but was not spatially confined to this locale. Habermas stresses that the classic public sphere was constituted in *lexis* [discussion], which could also assume forms of consultation (e.g., sitting in a court of law) as well as *praxis* [common action] (e.g., waging war or playing and attending games).

According to Habermas, the public sphere in its most ideal form peaked in the “specific historical circumstances of a developing market economy.”⁷⁰ It replaced the practices of the absolutist state in which the ruler’s power was represented *before* the people with a sphere in which “state authority was publicly monitored through informed and critical discourse by the people.” It exists as a normative space between civil society and the state.

Habermas’ bourgeois public sphere (the idealized public sphere) required the construction of a particular “framework of sociability—highly individuated, in spite of its comprehensive etiquette” that emerged with the “good society” of eighteenth-century capitalism, with its specific alchemy of publicity and privacy producing “civil society” as the domain of private autonomy and self-actualization standing in opposition to the state’s representational authority.⁷¹ The public sphere of civil society stood apart from the *publicum* or “general public,” the private people who served as the addressees or “abstract counterpart” of public authority (which transformed from the manorial lord’s feudal authority to that of the state, the law, and the police) and the public sphere.⁷² Rather, it existed as a relation between civil society and the state, in which “critical public discussion of matters of general interest was institutionally guaranteed.”⁷³

Habermas locates this as an urban phenomenon occurring in literary circles of the eighteenth-century bourgeoisie, in their salons (literally in parlors internal to the bourgeois’ private homes), in the café societies, and populated by a “new stratum of ‘bourgeois’” people.⁷⁴ As a concept, Habermas’ public sphere lends itself to the possibility of a cosmopolitan political order. It presupposes a democratic ideal and a constituency of reasoning minds, ‘a wisdom of the crowds’—James Surowiecki’s notion that the aggregated intelligence of a group is greater than the sum of its parts—whose opinion matters to each other and to those who govern. It has principally cognitive features, because its unity, held together by the collaboration or cooperation of its constituency, depends upon a common goal that is worked out through rational deliberation. Moreover, it is bound to a liberal belief in “the pre-established harmony of market economy and democracy. Both of these elements inform the dynamic of social modernisation but are linked to fundamental imperatives that repeatedly clash.”⁷⁵

There are three key features of this public sphere. First, it is made and unmade by its “communicative interconnectedness.”⁷⁶ It emerged in the eighteenth century through the growth

of coffee houses, literary and other societies, voluntary associations, and the press. It began to dissolve after the Revolution of 1848, with the social organization progressively breaking down due to forces from industrialization and the urbanization of society. With the fracturing of the old society, language lost its authority and communication got increasingly fragmented. Scattered across various communicative assemblages or publics, it became unsuited “to focusing the attention of a dispersed public of citizens who form opinions simultaneously on the same topics and contributions which have been scrutinised and filtered by experts.”⁷⁷ Second, it is reliant on the principle of feedback for both function and form. Habermas says, the public sphere’s composition is “a sounding board of an educated stratum tutored in the public use of reason” and this instructive feedback (the “sounding board”) is “the form of communication specific to a public.”⁷⁸ Third, its key component is publicity, which is produced by “a public critically reflecting on its culture [as opposed to] one that merely consumes it.”⁷⁹ Habermas maintains Enlightenment-era publicity as an ideal in which a critical public assembles to debate rational ideas and bourgeois cultural products and is bound by a humanistic code of conduct and a comprehensive etiquette.⁸⁰

The public sphere writ large is described as a ‘new social order’ that took shape in the context of early capitalism’s long-distance trade and markets that trafficked in commodities and news. What created the public sphere—its literary habitude that extended to the circulation of a ‘free’ press and its commercialization, its political instrumentation as a site for assembly and critical debate, the plastic concept of ‘publicity’—Habermas argues, is ultimately what destroyed it. Its demise is attributed to its mutation by the culture industry into a divisive and fragmented platform for amplifying special interests and making appeals to mass society’s basest prejudices.

The public sphere fell prey to competition among special interest groups “absorbed by the context of capital,” whose opinions came to be negotiated and managed by professional organizations that exclude a publicly generated intellect.⁸¹ Not only did publics transform, but their constitutive flows of public opinion mutated from the singular voice of a well-informed public shaped by debate (following the principle that we learn by revising our understanding of things) to “public opinion research,” “publicity,” and public relations, which all aimed to manage conflicts of opinion by shaping consensus and reproducing personalities. Oskar Negt and Alexander Kluge

refer to this oscillation between exclusion and intensified incorporation as a characteristic of *the public sphere of production*.

Why not publics? Rejecting the fetishizing of the singular public sphere

Habermas is far more interested in transformations of the public sphere than with any particular essentialization of it. Yet, the tendency is to fetishize the public sphere as exclusive; that is, as a determination of inclusive proprietary discourse ruled by reason and not irrationality.⁸² It is difficult to think of any area of participatory public discourse since then that can be described as being “ruled by reason” or as self-contained as the singular public sphere, or indeed, not always already existing as many transformational publics occupying many different spheres. Seyla Benhabib reasons that theories of *the* public sphere will always “appear to be a nostalgic trope”; whichever trope one chooses—from Arendt, Habermas, Lippmann, or Dewey—there is always a *what was then and no longer is* quality to these theories.⁸³ In fact, today’s public sphere, stripped of its ideology, is revealed as “a nodal point” for the conspiracies of business, politics, and media and circulated on the Internet, a “mass medium of freedom” while at the same time “a technology that thrives on control.”⁸⁴

In the wake of Habermas’ book documenting the plasticity of the public sphere, its historical and organizational contingencies, there have been many attempts to describe the “shifting conceptual contours and parameters” of the public sphere as a critical theoretical model. It is generally understood as an idealized construct among those who maintain there can be no legitimate contemporary public sphere because of the very specific, and idealized, discursive circumstances it requires to function. As recently noted by John Budarick, “What tends to remain central to discussions of the public sphere . . . is the centrality of questions over the communicative landscapes and structures within which deliberative debate can be said to take place.”⁸⁵

Consider how Jodi Dean’s argument that the Internet is *not* a public sphere has aged. In her 2003 essay, “Why the Net is not a Public Sphere,” Dean condemns all contemporaneous uses of the concept of public that add an “s”—inclusive of subaltern counterpublics who “trade on the normative currency of the concept while trying to avoid its exclusionary dimensions”⁸⁶—and refers to them as ultimately fruitless. She says if they are not public “in the Habermasian sense”—

that is, if they are exclusive, partial, oriented around specific concerns and interests—then they are not publics but special interest groups. By contrast, for Ulises Mejias (writing contemporaneously, in 2005) it is possible the Internet’s a public sphere networked by knowledge commons’ and for Pieter Boeder, the Net exhibits a *critical publicity* that retains the public sphere’s relevance for contemporary media theory.⁸⁷

Dean’s essay is angled at a negative analysis: of what the public sphere is not and what the Net is not. Even during what Habermas describes as the historical epochs in which the public sphere realized its most idealized version of itself—in the epoch of the Enlightenment, as a symbolic site for rational-critical deliberation and fully unmediated discourse amongst literate and propertied adherents of shared democratic values—it was never a public sphere as much as a sphere of mutual influence. The essential unity and universality that Dean (and other critics) requires never existed. Access to the bourgeois public sphere was not universal: it was restricted to professional men in possession of literacy and property, and who were committed to a certain kind of purposeful regimen Habermas describes as “a time-consuming process of mutual enlightenment” with the objective of bringing about democratic governance.⁸⁸ Nor was the public sphere ever a single sphere, as it consisted of three types of discursive enclosures: political, literary, and representative publicness. As Habermas notes, the public sphere came to exist as a structure and platform for sociability, critical discourse, and making sense of literature and the arts, news, politics, and collectively working out strategies for ‘the greater good.’

Nor was this unity a feature of its historical antecedents, as can be seen from Habermas’ examination of the Hellenic *res publica*. Habermas’ view of the public sphere as emerging from the market economy underpins his examination of Ancient Greece’s *agora*. Before it came to be understood colloquially as “the market,” the agora was the original communicative assemblage. It served as a gathering place outside of the *oikos* [the family/family-owned property]. It was a place for people to assemble, broadcast information, hear statements, gossip, and connect with others outside the family in expanded social networks. It was, in short, the kind of space that a singular “public sphere” cannot capture because it is already fluid and multiple.

With Habermas’ argument that the public sphere had become estranged from its idealized capacity as a space for the “free” assembly and circulation of critical-rational debate—to become

“an ideology of publicity in the service of communicative capitalism”⁸⁹—he takes a ‘the center cannot hold’ approach to formulate what happens to a public organ of common sense when it reaches and exceeds the limits of its expansion. At precisely what point do the burdens of capitalism—its confounding yet deliberate management of diverse publics into consensus and its tireless yet careless shaping of consumer culture—transform the public sphere into an open-air prison?

Habermas describes the shared dynamics of the courtly era of the ‘public sphere’ (both an “audience-oriented privacy” and a “subjectivity originating in the interiority of the conjugal family, by communicating with itself, [to attain] clarity about itself”⁹⁰) and its refeudalization by the early twentieth century with the consolidation of the mass media, mass audiences, and mass publics. By Habermas’ admission, all that remained of the public sphere by the mid-twentieth century was the “organizational principle of publicity”⁹¹ as it has taken shape in late capitalism: as a theater for obligatory ritualized performances. As with Edward Bernays’ “The Engineering of Consent” (1947 and 1955), the public is acted upon by the creation of “news,” which in turn shapes the attitudes and actions of “people”—by which he means “audiences”—and drives the plasticity of modern publics.⁹²

Shaping Publics

It is not sufficient to understand only the mechanical structure of society, the groupings and cleavages and loyalties. An engineer may know all about the cylinders and pistons of a locomotive, but unless he knows how steam behaves under pressure he cannot make his engine run. Human desires are the steam which makes the social machine work. Only by understanding them can the propagandist control that vast, loose-jointed mechanism which is modern society. —Edward Bernays, “The Engineering of Consent”⁹³

Just as crowds and flows of power are inseparable (see Elias Canetti), so are publics and currents of power. Modern newspapers sought out multiple nodes of influence but provided a platform to speak to the public for only a relatively small number of people. Mass literacy, on the other hand, endowed the printed word with unprecedented power to create mobile atmospheres of influence. Tarde writes, “there is not one sect that does not wish to have its own newspaper in order to

surround itself with a public extending far beyond it, causing a sort of *mobile atmosphere* in which it will be bathed, a *collective awareness* by which it will be illuminated.”⁹⁴

According to lettrist Ivan Chtcheglov (aka Gilles Ivain), the mobilization of atmospheres was necessary to counteract the flattening of modern metropolises. In “Formulary for a New Urbanism,” composed as a *dérive* through Haussmanized Paris, flattened out meant desocialized, commercialized, made “boring,” and universalized. The first line of Chtcheglov’s text reads: “We are bored in the city, there is no longer any Temple of the Sun.” There is no place of enlightenment, nowhere for people to come together freely and collectively; sensible experience is hypermediated and flattened by overexposure to artificial interactivity; there is no longer the knowledge commons of the agora, there is only the viral banalization of continuous communication necessitated by the spectacular capitalist market and moreover, “our imaginations, [are] haunted by the old archetypes.”⁹⁵ To make sense of all this, Chtcheglov proposes a robust topological demolition.

Stoic philosopher Marcus Aurelius cautioned about the unstable, unpredictable nature of public opinion in *Meditations*: “what doesn’t transmit light creates its own darkness.” A demobilized, demoralized, contaminated public dwells in darkness. *Fin-de-siecle* Viennese satirist Karl Krauss (aka the Viennese Kierkegaard) was the first to identify this tendency as one of the specific dangers of the mass circulation of opinion made possible by the modern newspaper—the overwhelming of knowledge by sensationalism—via the appeal to affect. In particular, he warned of the press’ weaponization of public opinion by means of ‘mangled clichés and hackneyed phrases’ for sense-stirring rather than for sense-making, and how the mobile atmospheres created by this would effectively be disenfranchised aggregations of contaminated political and social life. Like sufferers of Stockholm Syndrome, readers may enjoy, engage, and encourage the flattery of their prejudices and passions, tightening the loop of “mutual exploitation.”⁹⁶

Modern publics could be assembled and shaped by as little as a single opinion generator: a publisher, journalist, ideologue, or corrupt businessman who fails upward. Remarking that publics ‘have their kings,’ Tarde wrote, “the socialist state of mind or the anarchist state of mind [did not] amount to anything before a few famous publicists, Karl Marx, Kropotkin, and others, expressed them and put them into circulation.”⁹⁷ The transmission and circulation of these ideas, the dynamic

relations that are patterned by them *vis-à-vis* a “collective intelligence,” is how publics are created because “[the] *social is not given, it is made.*”⁹⁸

Publics are made through resonant communicative processes, namely feedback. Though Tarde didn’t believe publics were capable of creating their publicists, he did give a lot of power to how feedback—he describes statistics of circulation and subscriptions as “excellent thermometers”—provides necessary cues for editors to shape behaviors and thought along particular lines. Journalists, editors, and publishers are continuously acting on their public, selecting their readers, adapting content, and at the same time the public [an aggregate of individual readers] is choosing its paper, continuously refining its views, and modifying its behaviors. The public and the newspaper are shaped by “mutual selection, hence mutual adaptation.”⁹⁹

Tarde further suggests that “double selection” and “double adaptation” can be authoritarian mechanisms for shaping opinion and the general intellect into a “homogenous group, pliable and well known to the writer.” This enables bad actors like the publicist to “act with more force and more certainty”¹⁰⁰ in constructing and modulating thought and subjectivity. Tarde describes the shaping of a literary public whose growth is tethered to the circulation and sharing of ideas and beliefs. At the same time, this is an underinformed public, largely unaware that most of their seemingly conscious choices are socially dictated and subject to manipulation. These new techniques will ultimately prove useful for predicting, controlling, measuring, and shaping future publics into noospheres.

Edward Bernays, one of the pioneers of public relations, was the nephew of Sigmund Freud. His formulas for how to influence the desires of consumers were deeply influenced by Freud’s theories of unconscious mind as divided between conscience and perverse instincts/drives, and how these internal divisions could be manipulated and multiplied to generate new markets. In addition to parlaying Freudian analysis into market strategy, he was also responsible for delivering Freud’s work to an American mass market audience via his connections with US publishing houses.

Bernays, along with William S. Burroughs’ uncle Ivy Lee, was responsible for professionalizing the field of public relations in the late 1920s. Bernays was masterful in the manufacture of public opinion—both its objects and its processes. He is well known for his role in

creating effective propaganda for the Creel Committee (aka the Committee on Public Information) to promote US involvement in World War I. His other most notable work was transforming cigarettes into “torches of freedom” for suffragette consumers of Lucky Strike cigarettes, thus equating smoking with women’s liberation, and later—when the campaign pivoted its strategy back to the status quo—with a standard for beauty and female appetite created by and for men.



Figure 2.1. Bernays-era Lucky Strike ads promoting cigarettes as “progress,” and then recursively, psychically steering female appetite from autonomy and liberty to slavery to their own anxieties about their appearance, the male gaze, and industrial standards of beauty.

Public relations is the science and business of financializing desire, producing new subjectivities, and providing methods to control and shape capitalism’s compulsive, consuming publics. Bernays is perhaps best known by association with his concept of the “engineering of consent,” which was introduced in *Propaganda* (1928). It is here he proposes the creation of a public scientifically engineered by manipulation of its affects and desires as necessary for a functioning democratic society:

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, and our ideas suggested, largely by men we have never heard of. . . . It is they who pull the wires that control the public mind.¹⁰¹

For Bernays, the mass media was an enormous amplifying system, a very useful tool for the powerful in magnifying pulses and whispers and as the way to “open doors to the public mind.” He drew upon crowd theorists’ psychology of masses and group mind (in particular, Gustave Le Bon, Walter Lippman, and Sigmund Freud). Like Tarde, he believed that individuals assemble as publics regardless of physical proximity, for “even when he is alone in his room with the curtains drawn[,] his mind retains the patterns which have been stamped on it by the group influences.”¹⁰² Bernays proposed that the engineering of consent is the very essence of the democratic process: it is the freedom to persuade, suggest, and affect shifts in mass behavior and mass culture. This transmutation of publicity can be taken as negative, but unlike the exclusive character of the public sphere it is a group invitation open to everyone to participate in a public sensorium.

What it means to become a public could describe the *communing of the life of the mind* in the sense that thinking—once believed to be a solitary practice and formerly only considered possible as a private, wholly interior pursuit (e.g., Kierkegaard’s paradigm)—has become radically externalized, if we follow McLuhan’s account in *Understanding Media*:

after more than a century of electric technology, we have extended our central nervous system itself in a global embrace. . . . Rapidly, we approach the final phase of the extensions of man—the technological simulation of consciousness, when the creative process of knowing will be collectively and corporately extended to the whole of human society, much as we have already extended our senses and nerves by the various media.¹⁰³

Where in the mid-1960s McLuhan saw the potential for a corporate administration of global consciousness, by the 1990s Paul Virilio saw the communization of affects on the horizon, with a community of emotional subjects replacing Habermas’ public sphere.

To begin, the systems of subjectivity that direct our attention and support decision-making are the same used in the processing of “affective information.”¹⁰⁴ In fact, what Tony D. Sampson has said Tarde intuited, that there is a neural basis for all affects and emotions, the extent to which this is the case was only discovered relatively recently. Recent research in adult neurogenesis—

which looks specifically at how the brain (its hippocampal function) is shaped through experience—also suggests that aversive experiences (e.g., chronic stress, trauma, and social isolation) decrease the production of new neurons and inhibit learning, whereas experiences with a positive valence (from running to enhanced social connectedness) have the opposite effect. Research indicating post-traumatic neurogenesis renders the picture far more complex.

World-renowned neuroscientist Antonio Damasio proposed in 1994 that “human reason depends on several brain systems, working in concert across many levels of neuronal organization . . . [these] maintain direct and mutual relationships with virtually every bodily organ, thus placing the body directly within the chain of operations that generate the highest reaches of reasoning, decision making, and, by extension, social behavior and creativity.”¹⁰⁵ He describes the coordination of this effort as akin to watching a scene play out over a body landscape, one that is innovated or “continuously updated” by the interplay of “light and shadow, movement and sound” made by resonances of body states with the specific neural systems that integrate signals related to the body’s structure and regulation and are in constant interaction and conversation with our social environments (as well as our thoughts and memories).¹⁰⁶

Brian Massumi describes this as “event-contagion,” in which “[t]he passing of the threshold occurs in dividual-transindividual feed-forward and feed-back. No cause can be isolated.”¹⁰⁷ For example, Massumi discusses how the self-immolation of a twenty-six-year-old Tunisian cigarette vendor in December 2010 catalyzed not only the events of the Tunisian Revolution and Arab Spring, but also Tahrir Square in January 2011, the Occupy Movement in September 2011, the student strike in Montreal in February 2012, and I would argue, social movements ever since, including #BLM. These events, and their publics, are “affectively entangled at a distance”:

For each new occurrence in the series, there [are] what Simondon calls ‘germinal forms.’ These are affections occurring immanent to a field of relation that already has a certain consistency, including a texture of conventional belongings The germinal affection-event catapults the relational field toward a critical point, where it must either fragment into a turf fight between constituencies, or pass, as an unspecified whole of flow, over a threshold to a new consistency. The passing of the threshold occurs in dividual-transindividual feedforward and feed-back. No cause can be isolated. The

germinal affection-event is catalytic (given the conditions), not causally determining. The effect it produces cannot be predicted: it must be invented.¹⁰⁸

Long before the Internet was invented, Tarde introduced this line of inquiry, paying particular attention to what kind of social groups were emerging from an era that saw vastly increasing speeds applied to the circulation of information. Namely, among urban readers of newspapers, there was potential for a “perfect and absolute” sociality borne of these new relations that would consist of “such an intense concentration of urban life that as soon as a good idea arose in one mind it would be instantaneously transmitted to all minds throughout the city.”¹⁰⁹

Speed, Stress, and Somnambulance

And when you fall asleep, I go places and do things without you.
—Tyler Durden to Jack, in *Fight Club* (1999)

The biological is always social, and it's the social that's contagious.
—Tony Sampson (2013)¹¹⁰

The early twentieth century, with “its perfected means of locomotion and instantaneous transmission of thought from any distance” brought the true emergence of publics.¹¹¹ There is an eroticism, or affective energy, to distanced connectivity that works to great advantage in assembling publics. Speed lends to the virality of beliefs, desires, and psychological states, allowing them to “become heightened through mutual contact,” “imitated by degrees,” and “redoubled.”¹¹² In *Virality* (2012), Tony D. Sampson contends that Tarde approaches his age of contagion as one in which “social man is a somnambulist.” He writes that Tarde’s sleepwalker is distinct from the docile masses subdued by Le Bon’s leader-hypnotist because he blurs that difference—instead of a one-way communicational model of power (between a leader and subdued subjectivities), there is a “reciprocal biosocial relation” and a “collective action of the many” that are “inseparable self-other relations” trafficked at a largely unconscious level. This is the level of *infra-consciousness*—and it is noncognitive yet vulnerable to measurement and control.

As Sampson writes, “This is a world . . . and a space in which affects are significantly passed on, via suggestions made by others, more and more through networks.”¹¹³ This dissertation’s conceptualization of plastic publics attempts to understand, to reflect upon, virality’s

generation of transient yet repetitious “neurophysiological ecosystems” and “epidemiological spaces,” in which a world of things mixes with emotions, sensations, affects, moods, machine learning algorithms, entrainments, dark patterns, engagement hacking, and other techniques that bypass our rational faculties—all of which are transmitted through “mostly unconscious topologies of social relation.”¹¹⁴

Sampson has revisited Tarde’s sleepwalker in a trilogy of books over the last decade that engage how virality works in different eras of digital contagion and capitalism, with different pressures and capacities for the neurogovernance of publics. This figure has also been explored by Elizabeth Grosz, Wendy Hui Kyong Chun, Yves Citton, Jonathan Crary, Jussi Parikka, Matthew Fuller and Andrew Goffey, Bernard Stiegler, Alexander Galloway and Eugene Thacker, Christian Borch, and others—to understand, for example, the topologies of networked neuroculture and “non-cognitive capitalism.”

This dissertation will focus upon Sampson’s conceptualization of this figure. Tarde’s sleepwalker is *hypnotically obedient*, but it is unclear whether they are entirely subjugated (docile) or have some agency.¹¹⁵ And also, it is a sphere of mutual influence by which “the roles of hypnotizer and hypnotized become blurred in the indirectness of Tarde’s social epidemiology. Control is not by fear alone. It is the object of desire—*belief*—that reproduces obedience in the somnambulist. The somnambulist succumbs to the power of hypnosis because of involuntary fascinations, attractions, allures and absorptions, and active emotional engagements involved in the process of becoming hypnotized and believing what is suggested to him. The obedience of the somnambulist is, as such, drawn to the virality of a love that is persistently invested in but never truly satisfied.”¹¹⁶

In *The Assemblage Brain* (2016), Sampson addresses the present moment of neuropower as the “open control society” imagined in apocalyptic futures by William S. Burroughs (and Aldous Huxley) and conceptually developed by Gilles Deleuze in “Postscript on the Societies of Control.” He argues “the sleepwalker concept must probe the neuro-management of collective user experiences.”¹¹⁷ Evolving networked technologies have made more repetitive, more plastic, and shareable the neurotransmission of *affective contagion*, and thus, the contemporary somnambulist “enters into the technological unconscious infused by the ‘dreaming’ of the algorithm. *Like*

surrealist automatic writing, the consumption of the network is automatically generated and distributed while users and their computers are sleeping.”¹¹⁸ Sampson discusses neuromarketing as a phenomenon that began in the 1990s with the introduction of fMRI as a market-research tool and EEG as brainwave entrainment for the infra-management of cognitive and affective states so as to steer consumption by way of neurotransmission, neurochemical control, and affect engineering (among others).¹¹⁹

New technologies of neuropower are always innovating with new ways of understanding the *epidemiological relation* that motivates consumer intent and its efficacy on somnambulant publics:

[N]eurocapitalism is increasingly concerned with infrasubjective relations, such as those established in collective rhythmic entrainments. Like this, Stiegler’s neuropower evokes the social ecology of brains that Gabriel Tarde’s nineteenth-century media theory hinted at, that is to say, an ecology of mostly unconscious associative relational flows in which brains fascinate and polarize the desires and beliefs of other brains.¹²⁰

Such as with Facebook’s recent rebranding as “Meta” following its recent unveiling by whistleblower Frances Haugen (among others) for its “deceptive commercial practices,” or to put it another way, its purposeful diffusion and amplification of misinformation to drive traffic through its social networks. So, while reaching and inhabiting the social network concept of the metaverse might seem like utopia for extreme data-driven types like Mark Zuckerberg, to many others, it’s just another company renaming itself so as to avoid the consequences of bad/negative media attention, by which scrutiny might disturb the brand’s analytic comportment. Objectively, it is a dis-association and disconnection, a negativity festering in the algorithms that underlie the pseudo-positivity enforced by Facebook, which is now re-presented as just one of Meta’s platforms, one of the ‘more primitive’ (first-generation/screen-based) ways to connect with others in the future metaverse, which doesn’t exist; it needs to be built.

In pursuing his own “updated” sleepwalker, the “Neosomnambulist,” in *A Sleepwalker’s Guide to Social Media* (2020), Sampson writes:

The network distribution of affect is indeed regarded as an ever more ‘planned’ expansion of a new kind of *technological unconscious*. The proliferation of this insentient mode of relationality is marked to some extent by a shift from a dial-up culture to an age of permanent connectivity.¹²¹

This is why, social changes must be caught as they happen and examined in great detail in order to understand social states, not the other way around.¹²² Social processes grounded in individual subjectivity are metastatic and self-propagating. Social action is the spontaneous imitation of beliefs and desires that become internalized by individual subjects and, through processes of learning and innovation, “[t]here is a constant interweaving of . . . the unifying growth of imitation and the systematizing growth of invention.” Inventions imitated throughout increasingly broad areas of social life “radiate,” “vibrate,” and generate numbers of oppositions, which in turn create increasing numbers of subsequent inventions.¹²³ Tarde refers to this as *the law of progressive enlargement* whereby an “imitative radiation . . . labors constantly and, so to speak, clandestinely to enlarge the special field of social phenomena.”¹²⁴

In *24/7: Late Capitalism and the Ends of Sleep*, Jonathan Crary argues that the 24/7 economy and its subsequent algorithmically orchestrated automation have mutated sleep, work, and social patterns in ways that constantly test the limits of bodies and subjectivities—individually and collectively—to maintain metabolic disequilibrium. Sleep affects how nerve cells (neurons) communicate with each other. Abnormal sleep behavior negatively impacts circadian and homeostatic systems, and in turn, dysregulates hormonal rhythms, the metabolism, immune system, etc. And, because sleep regulates the brain’s flow of epinephrine, dopamine, serotonin, and oxytocin, chemicals closely associated with mood and behavior, sleep irregularities can cause psychological disturbance. Mood and sleep use the same neurotransmitters.¹²⁵ The constant connectivity of the 24/7 economy’s spatiotemporal rhythms is a principal source of social dysregulation and *dis*-integration. Crary insists that “contrary to many claims, there is an ongoing diminution of mental and perceptual capabilities rather than their expansion or modulation.”¹²⁶ Rather than people becoming habituated to the rhythms of technology’s inexorable progress, “for the vast majority of people, our perceptual and cognitive relationship to cognitive and information technology will continue to be estranged and disempowered because of the velocity at which new products emerge and at which arbitrary reconfigurations of entire systems take place. This

intensified rhythm precludes the possibility of becoming familiar with any given arrangement.”¹²⁷
In this temporality the “individual is made into an *application* of new control systems and enterprises.”¹²⁸



Figure 2.2. Gray matter as gray media.

What Now? What Next?

The history of ideas should never be continuous; it should be wary of resemblances, but also of descents or filiations; it should be content to mark the thresholds through which an idea passes, the journeys it takes that change its nature or object. Yet the objective relationships between animals have been applied to certain subjective relations between man and animal, from the standpoint of a collective imagination or a faculty of social understanding. —Deleuze and Guattari, *A Thousand Plateaus*¹²⁹

In *24/7*, Crary focuses on the incompatibility of late capitalism’s cycles of “accumulation, financialization, and waste” with the preservation of, or hope for a future for, individual and social life: “[a]s an announcement of its absolute unlivability, 24/7 . . . not only incites in the individual subject an exclusive focus on getting, having, winning, gawking, squandering, and deriding, but is fully interwoven with mechanisms of control that maintain the superfluousness and powerlessness of the subject of its demands.”¹³⁰ A decade later, Crary reports there will be no livable, shared future if it is not taken offline and “uncoupled from the world-destroying systems and operations

of 24/7 capitalism.” 24/7 capitalism, he argues, is “sociocidal.”¹³¹ It is biopolitical and necropolitical. Paul Virilio’s “dromology” also addresses the incompatible temporality of capitalism with self-preservation, drawing upon the Ancient Greek noun for racetrack to describe the phenomenon of speed-as-progress as a never-ending acceleration. He elides this with his previous work on “habitable circulation,” spatio-dynamic architectures developed in collaboration with Claude Parent during the 1960s, which worked to stretch and bend the body for a “new plane of human consciousness” made possible by the permanently active and unending circulation of electronic information. The work was oriented around making the uninhabitable habitable through co-introducing a new topological model for experiencing space, adaptive bodily techniques, and agency.¹³²

In trying to elaborate on and forge a better understanding of his concept of the multitude as “publicness of the intellect,” Paolo Virno cites the *topoi* of Aristotelian rhetoric as a possible framework: specifically, the *topoi koinoi* [common places] and *topoi idio* [special places]. Virno describes modernity’s panoply of *topoi koinoi* in discursive terms: as stereotypical expressions, banalities, lifeless metaphors, trite linguistic conventions. These discursive commonplaces occur wherever language is flattened out and standardized, which is always optimizing for maximal effect. Consider today’s algorithmic media objects—the “cute” memes,¹³³ viral Netflix, trending tweets, Instagram filters, TikToks, Zoom backgrounds, catchphrases and hashtags—being circulated among digital publics, enriching a sense of unity. Taken collectively, *topoi koinoi* are the most abstract and general material of a common mental space that can be shared without making any uncomfortable changes in one’s own habits and ideology. Norms are the product of social interaction, yet being “norms,” they lend themselves to technological reproducibility and inattentive reception. Walter Benjamin said of this as a thoroughly modern phenomenon: “*The public is an examiner, but an absent-minded one.*”¹³⁴

Publics express a need to be social, to congress, commune, collaborate and cooperate, but also a need to be free from the slavery that Stoic philosopher Seneca talked about: the slavery of pointless obligations, other people’s expectations and opinions, materialism, as well as the slavery of addiction or ambition. Tarde’s somnambulists sleepwalk into a public. McLuhan envisions a potential collective awakening as intense awareness of becoming mediumistic to the shocks and

stimulations of electronic feedback, its meaning and impact on our actions after centuries of a Kierkegaardian cultivated unawareness of our psychic and ethical capacities. What of publics now? Especially during the globally mandated remoteness of multiple lockdowns, the banalization of network encounters, the always upbeat updates that traffic almost everything—from close friends’ accomplishments to an unsolicited gift or discount from an online retailer, to the memes that are the new reflective media, or the viral toxicity of hate, apathy, and fear that connects us all on social media? What is the impact of connectivity on all manners of social life—and not just humans in relation to other humans and computers?

Let’s consider, in closing, the stakes for plastic publics in terms of Mark Zuckerberg’s conceptualization/branding and selling of an immersive “next-gen” Internet he termed “the metaverse,” or more specifically Meta’s VR service: “Horizon Worlds.” The metaverse is not a new invention, it is not an unfamiliar space, in fact, it necessarily builds on our nostalgia and experience of networked sociality, science-fiction, entertainment, games, and the merger of infotech, biotech, and publics to deliver its version of networked subjectivity, inhabited by cosplay avatars—Zuckerberg enthuses that these can be whatever version of ourselves we desire!—and holograms. Experience, finally flattened by the cognitive and existential burdens of overconnection, the depressive feedback loop of consumption and degradation, the violence of today’s discourse, the trauma of environmental devastation and long-term exposure to fear, anxiety, infection, death, and misinformation ephemeralizes the constant crises of everyday life that test our limits. Violence and “toxic content” feed back into and infect publics but play a diminished presence in terms of affect, attention, reflection, and learning. In fact, in the vision of the metaverse presented by Zuckerberg they play no apparent role at all. As Ian Bogost warns, this metaverse is a tech-engorged fantasy of power in which, “[s]lowly, eventually, *the uncontrollable material world falls away*, leaving in its stead only the pristine—but monetizable—virtual one.”¹³⁵

In a long keynote address (approximately eighty-eight minutes), initially to Facebook’s publics on October 28, 2021, Zuckerberg rebranded Facebook as Meta Platforms, Inc. and presented it as principally a platform for an emergent metaverse project, which he referred to repeatedly as “*our* vision for *the* metaverse.” Because, he tells us, “*we* are *all* building this together.”¹³⁶

Zuckerberg’s vision of the metaverse, the new frontier and promised land of technological progress awash in soft pastels, a Gaussian glow, and promises of accessible material wealth, will provide “the deep *feeling of presence*” currently lacking in the gridlocked worlds of our screen-based connective technologies and social media apps, many of which Zuckerberg already owns. As Zuckerberg repeatedly incants to his captive audience via their screen-based devices: “The *feeling of presence* is the defining quality of the metaverse.” And moreover, the metaverse is “all about co-creating,” and, learning—about “new ways to be,” “create the future,” and “grow the community”; how to create immaterial things like atmospheres, environments, moods; and deeply material things like jobs and monetization tools that “might only make sense in the metaverse”—like NFTs and cryptocurrencies, which struggle to make sense in the present reality.

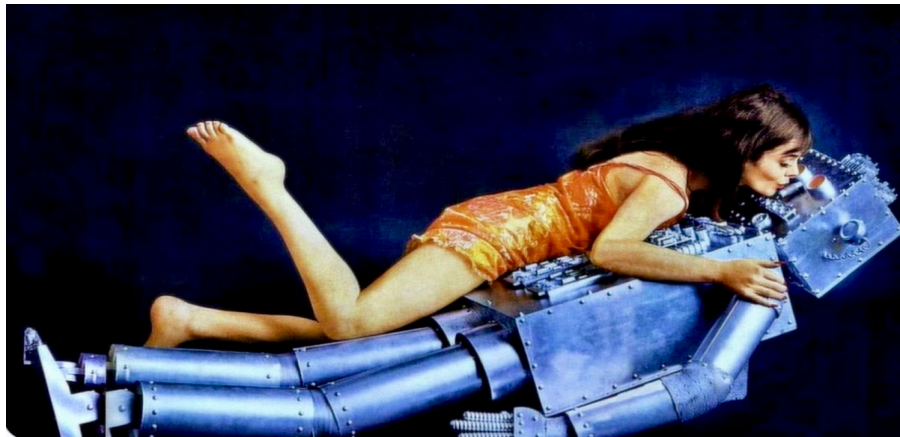


Figure 2.3. “Now look up at the sun, close your eyes, feel completely wrapped in virtual goods and commerce. That is the ultimate expression of social networks. That is the metaverse.”¹³⁷

Zuckerberg’s metaverse is modeled on the immersivity and engagement provided by popular entertainment—in which everything is dictated by commerce—but even more so by gaming. In the keynote, he declares the experiential threshold to the metaverse “will be provided by gaming.” It will make life simpler, better, and more controllable, Zuckerberg proposes, if we gamify the pressures of everyday life, use exclusively action items, positivistic and growth language (e.g., “learn,” “build,” and “create”) to model a “presence platform”—the metaverse—in which a multi-domain singularity is animated by augmented reality (called “Horizon” by Oculus at Meta). In this conceptualization, publics are more connected than ever with a broad range of

neuro- and nanotechnologies, machine perception and AI tools, but also by design, the metaverse's unquestionably escapist, unsustainable avoidance of social realities and everyday life complexities. Avoidance is the material substrate of the metaverse, supported by Zuckerberg's suggestion that the metaverse is *beneficial for the environment* because people will be able to telecommute, teleport, be telepresent and thereby lessen emissions from cars and planes and otherwise mitigate the devastating impacts of human values, attitudes, behavior, and (in)action on climate change. Even more so because the precise example he uses is distinctly his own: "even one less flight per year." "Working in the metaverse is probably better than anything you can do for the environment" is a seduction because that is not truly a priority for Meta; the goal is the growth of attention ecologies for the organization that will augment its power, wealth, agency, and social control. With the metaverse, embodiment is reimagined as a form of escapism, an avoidance of realities. And what about the components of human society that don't fit into this "high-growth" tech vision of the metaverse? Those institutions that are becoming increasingly inoperable with COVID-19: democracy; education; health care; and *belief in public institutions*, truth, each other. Nevertheless, as Bogost discerns, "A metaverse . . . assumes complete interoperability."¹³⁸

When introducing the metaverse, at no point does Zuckerberg address or indicate any knowledge of or responsibility for his company's transgressions against its publics—not only its credible role in perpetuating crimes against humanity and enabling human suffering with its platform's degenerate governance, its cannibalization of publicity, its efforts to impose a particular regime of knowledge and aesthetics of power and to supply the virtual lifeworld of a vast public sphere networked by its template for sensibility as the singular domain of knowledge and politics.¹³⁹ While he makes it seem as if the idea for Meta (the parent company of Facebook, Instagram, WhatsApp) emerged from a period of deep reflection, and out of a sense of personal (as a corporate entity) responsibility toward shaping the future of information, entertainment, and communication for increasingly networked plastic publics—he goes into no details about what the last few years have involved for his company (its refusal and failures to manage its viral transmission of violence, unrest, disorder, and misinformation around the world), and even more so, for the world and the ecosystems that his company has engulfed in social media identity bubbles commensurate to its devastating power and wealth. At the same time, without a pivot, he seeks to

break digital ground, to create or play a powerful role in a new, eugenic world order that aligns with this crypto-totalizing vision: “products aren’t enough. We need to help build ecosystems.” Meta wants to grow larger by flattening the horizon of human suffering and building a virtual Erewhon.

If the metaverse is a symptom of the out-of-control feedback loop that William Burroughs warned about in terms of control societies—*control always needs more control, like junk*—insentience is the new form of incontinence. Unfortunately, whereas McLuhan’s adaptive theory of media had a progressive idea that form coevolves with human sensory capacities and social values—with Zuckerberg’s Meta, the effort is viral and deadly, because fundamentally his vision of our future serves to enhance control of the platform, the media, the narratives, the messages for Big Tech. It is growth produced through engagement which can then be monetized (GEM)—the presence that emerges as value-added data upticks and not copresence, that allures in the metaverse, just as Zuckerberg has repeatedly chosen growth over all other considerations. Because everything in the metaverse is monetized, Zuckerberg argues, people in the metaverse will have freedom: the “freedom to create a business model that works for them.” Human desires are the steam which makes the social machine work, and as Bernays observed, only by understanding them can the propagandist control publics. So, current propagandists and technologists (like Zuckerberg) create platforms to test the limits of the human capacity to withstand pressures—including isolation, sensitivity to velocity, overstimulation, anxiety—and transform these pressures into the promised pleasures of tomorrow. Pharmakon-like, the metaverse aims to restore the connectedness and unity of publics, but without establishing built-in cognitive and affective fail safes for the harms that come with internalizing the power relations of hypercapitalism (as forms of self-governance) the metaverse demands. This recalls C.W. Mills’ observation in *The Power Elite* (1956): “Ordinary men,” Mills writes on the opening page, “often seem driven by forces they can neither understand nor govern. . . . The very framework of modern society confines them to projects not their own, but from every side, such changes now press upon the men and women of the mass society who accordingly feel that they are without purpose in an epoch in which they are without power.”¹⁴⁰

Historically, people could separate publics along geographic boundaries—to bring all of a kind together and to marginalize difference—and now it’s affinities, dispositions, disgust. If we look at the history of publics, we see “urges” to unite, to differentiate, and to smash publics against publics. It’s no longer spatial because the mob resides in the noosphere that is intra-active, it connects and inhabits everyone. As futurist Ray Kurzweil recently wrote, rather ominously, “Isolation puts pressure on industries to redefine themselves. . . . Since people cannot escape, the escape must come to people’s household’s and relax their minds. And the ways VR can interact with human minds are limited by imagination, and are, therefore, boundless.”¹⁴¹

With COVID-19, people became rapidly and unprecedentedly isolated. We were constantly under pressure to adapt our capacities and incapacities to the communicative technologies that increasingly provided our only ways to connect without the imminent threat of physical contagion. Metaverses are co-constituent with badly governed public threats and traumas. Rather than providing the new frontier we are instead coaxed to be ignorant to it, to pay it less attention, and to focus on building our own business empires. Yet, trauma eventually demands the attention, healing, and care it deserves. Or else, it threatens to destroy the host.¹⁴²

Notes

¹ Gabriel Tarde, “Economic Psychology,” trans. Alberto Toscano, *Economy and Society* 36, no. 4 (2007): 633.

² Hans Paul Bahrdt (*Industrieburokratie*, 1958), quoted in Jürgen Habermas, *Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, trans. Thomas Burger with Frederick Lawrence (Cambridge, MA: The MIT Press, 1991), 159.

³ Elias Canetti’s *Crowds and Power* (1960) provides a taxonomy of historical crowds. For more recent conceptualizations, see Mustafa Emirbayer and Mimi Sheller, “Publics in History,” *Theory and Society* 28, no. 1 (February 1999): 145–197. For subaltern counterpublics, see Nancy Fraser’s “Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy,” *Social Text* 25/26 (1992): 56–80; for counterpublics, see Rita Felski, *Beyond Feminist Aesthetics* (1989) and Michael Warner, *Publics and Counterpublics* (Brooklyn: Zone Books, 2002); for “non-publics,” first used by Francis Jeanson during events of May 1968 to designate all who were excluded from culture (i.e., the vast majority of the population), see Daniel Jacobi and Jason Luckerhoff (eds.), *Looking for Non-Publics* (Quebec City: Presses de l’Université du Québec, 2012); for public spheres of production, see Oskar Negt and Alexander Kluge’s *Public Sphere and Experience* (1972); and for the non-state public sphere, see Paolo Virno’s “Publicness of the Internet” (2001) in *A Grammar of the Multitude* (2004). For a book that traces crowd semantics from its nineteenth-century emergence (with Tarde) to the present, see Christian Borch, *The Politics of Crowds: An Alternative History of Sociology* (Cambridge and New York: Cambridge University Press, 2012). An author whose work I frequently entangle with in this dissertation, Tony Sampson, engages on the regular with Tarde via Deleuze and Guattari, Nigel Thrift, Sadie Plant, Andrew Goffey, Jonathan Crary, et al. This chapter acknowledges Tarde’s very early—but not as early as Kierkegaard’s—recognition that “the reproduction of desire becomes a central concern of the capitalist machinic assemblages.” On Tarde, see Tony D. Sampson, *Virality: Contagion Theory in the Age of Networks* (Minneapolis and London: University of Minnesota Press, 2012), 12.

⁴ Virno writes, quite beautifully with regard to the open process of inquiry: “With regard to the multitude, we are left, instead, with the absolute lack of codification, with the absence of a clear conceptual vocabulary. But this is a wonderful challenge for philosophers and sociologists, above all for doing research in the field.” See Paolo Virno, *A Grammar of the Multitude* (New York and Los Angeles: Semiotext(e), 2004), 43–44.

⁵ Margreth Lünenborg, “Affective publics,” in *Affective Societies: Key Concepts*, ed. Jan Slaby and Christian von Scheve (Milton Park, Abingdon/New York: Routledge, 2019), 322.

⁶ Danah Boyd, “Social Network Sites as Networked Publics: Affordances, Dynamics, and Implications,” in *A Networked Self: Identity, Community, and Culture on Social Network Sites*, ed. Zizi Papacharissi (New York and London: Routledge, 2011), 39–58.

⁷ See Warner, *Publics and Counterpublics*; Michael Warner, “Publics and Counterpublics (abbreviated version),” *Quarterly Journal of Speech* 88, no. 4 (November 2002): 413–425.

⁸ See Zizi Papacharissi, *Affective Publics: Sentiment, Technology, and Politics* (Oxford and New York: Oxford University Press, 2015); and Zizi Papacharissi, “Affective publics and structures of storytelling: sentiment, events and mediality,” *Information, Communication & Society* (2015), <http://dx.doi.org/10.1080/1369118X.2015.1109697>.

⁹ Warner, *Publics and Counterpublics*, 8 and 12.

¹⁰ Zia Tong’s *The Reality Bubble* investigates bias as blindness (recalling John Carpenter’s 1998 cult film *They Live* (which Tong acknowledges)—and urges changes in our vision, away from the “common sense” of publics towards what Zong describes as a far superior “scientific truth.” See Zia Tong, *The Reality Bubble: Blind Spots, Hidden Truths, and the Dangerous Illusions That Shape Our World* (London and Toronto: Allen Lane, 2019). For one of many early critiques of Zuckerberg’s newly assembled Meta and its vision of the future as a self-made metaverse, see Ian Bogost, “The Metaverse Is Bad,” *The Atlantic*, October 21, 2021, <https://www.theatlantic.com/technology/archive/2021/10/facebook-metaverse-name-change/620449/>.

¹¹ In addition to “social psychologist,” Tarde has been described as a criminologist and sociologist. However, what his various translators and interlocutors seem to agree on is that what he practiced, and the lens he used, is one of “psycho-sociology.” Tarde expressed his own views on the necessity of understanding sociology through the lens of psychology: “psychology cannot be excluded from sociology as social processes consist, in the final analysis, of inter-mental relations.” See Terry N. Clark, ed., *Gabriel Tarde: On Communication & Social Influence: Selected Papers* (London and Chicago: The University of Chicago Press, 2011), 16.

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- ¹² Elihu Katz refers to them as ‘unintentional companions’ with unlikely resonances on a number of points (e.g., the interacting components that define ‘public space’ and their eventual conclusions regarding the role of conversation in publics). See Elihu Katz, “Rediscovering Gabriel Tarde,” *Political Communication*, no. 3 (2006): 263–270.
- ¹³ Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis and London: University of Minnesota Press, 2005/1987), 279.
- ¹⁴ Fernando Pessoa, *The Book of Disquiet*, ed. and trans. Margaret Jull Corta (New York: Serpent’s Tail, 1991), 100.
- ¹⁵ Søren Kierkegaard, *The Present Age*, in Søren Kierkegaard, *Two Ages: The Age of Revolution and the Present Age, A Literary Review*, ed. and trans. Howard V. Hong and Edna Hong (Princeton: Princeton University Press, 1978), 90.
- ¹⁶ Kierkegaard, *Two Ages*, 111.
- ¹⁷ Nigel Thrift, *Non-Representational Theory: Space|Politics|Affect* (London and New York: Routledge, 2008).
- ¹⁸ Hubert L. Dreyfus, “Nihilism on the Information Highway: Anonymity vs. Commitment in the Present Age,” in *On the Internet* (London and New York: Routledge 2001), 88.
- ¹⁹ Deleuze and Guattari, *A Thousand Plateaus*, 279–280.
- ²⁰ A fascinating woman. So little information on her available in English. She was fifty-four when she first started publishing; she published around thirty novels, stories, and plays until her death at eighty-three. Kierkegaard was also known to regularly use pseudonyms and heteronyms in his aesthetic and philosophical production and by acts of “divine” depersonalization. Similarly, the brilliant Portuguese author Fernando Pessoa, who is part of the epigraph of this chapter, is even better known for this strategy of escaping assimilation through his extensive use of heteronyms (as many as seventy-two, possibly more).
- ²¹ Kierkegaard, *Two Ages*, 84.
- ²² Kierkegaard, *Two Ages*, 64.
- ²³ Kierkegaard, *Two Ages*, 74 and 88. Also, Mark C. Taylor, *Kierkegaard’s Pseudonymous Authorship: A Study of Time and the Self* (Princeton and London: Princeton University Press, 1975), 369.
- ²⁴ Kierkegaard, *Two Ages*, 77.
- ²⁵ Daniel J. Czitrom, *Media and the American Mind: From Morse to McLuhan* (Chapel Hill: University of North Carolina Press, 1982), 11–12.
- ²⁶ Kierkegaard, *Two Ages*, 92–93.
- ²⁷ Kierkegaard, *Two Ages*, 94.
- ²⁸ Kierkegaard, *Two Ages*, 90–91.
- ²⁹ Kierkegaard, *Two Ages*, 100–102. Here, Kierkegaard defines formlessness as “the annulled passionate distinction between form and content.”
- ³⁰ Kierkegaard, *Two Ages*, 104.
- ³¹ Søren Kierkegaard, *Concluding Unscientific Postscript*, trans. Walter Lowrie and Joseph Campbell (Princeton: Princeton University Press, 1974), 314.
- ³² Karl Verstrynge, “Being and Becoming a Virtual Self: Taking Kierkegaard into the Realm of Online Social Interaction,” *Kierkegaard Studies Yearbook*, 2011: 316.
- ³³ James W. Carey, *Communication as Culture: Essays on Media and Society*, rev. ed. (New York: Routledge, 2008), 155–177.
- ³⁴ See Karl Kraus’ dramatic masterpiece, *The Last Days of Mankind* (1919). In Karl Kraus, *The Last Days of Mankind: The Complete Text*, trans. Fred Bridgham and Edward Timms (New Haven: Yale University Press, 2015).
- ³⁵ Søren Kierkegaard, *Christian Discourses*, trans. Walter Lowrie (Princeton: Princeton University Press, 1971), 42.
- ³⁶ Søren Kierkegaard, *The Journals of Kierkegaard*, ed. and trans. Alexander Dru (New York: Harper Torchbooks, 1959/1835), 133.
- ³⁷ Kierkegaard, *The Journals of Kierkegaard*, 45 and 46.
- ³⁸ Prominent among these theorists are Enrico Ferri, Pasquale Rossi, Scipio Sighele (*La folla Delinquente*, 1891), Henry Fournial (*Essai sur la psychologie des foules*, 1892), Hippolyte Taine, Gustave Le Bon (*Psychologies des foules*, 1895), Gabriel Tarde, and Emile Durkheim.

³⁹ In Rudé's analysis, *sans culottes* only partially account for the rioters and insurgents of the French Revolution; bourgeois, *rentiers*, merchants, civil servants, and professional men also "engaged in the destruction of the *barriers* (possibly as direct agents of the Orleanist faction at the Palais Royal), in the capture of the Bastille, the Champ de Mars affair, the assault on the Tuileries, and the outbreak of Prairial. Women . . . were particularly in evidence in the march to Versailles, the food riots of 1792–1793, and in Prairial." See George Rudé, *The Crowd in the French Revolution* (London, Oxford, New York: Oxford University Press, 1959), 184.

⁴⁰ To give one example, Le Bon observed, "The divine right of the masses is about to replace the divine right of kings." See Gustave Le Bon, *The Crowd: A Study of the Popular Mind*, trans. np (Kitchener: Batoche Books, 2001), 16.

⁴¹ See, for example, Le Bon, *The Crowd*.

⁴² Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, trans. Thomas Burger with Frederick Lawrence (Cambridge, MA: The MIT Press, 1991), 10–11.

⁴³ Gabriel Tarde, "The Public and the Crowd," in *Gabriel Tarde: On Communication & Social Influence, Selected Papers*, ed. Terry N. Clark (Chicago and London: Chicago University Press), 281. My emphasis.

⁴⁴ Tarde, *On Communication & Social Influence*, 281.

⁴⁵ Clark, *On Communication & Social Influence*, 53.

⁴⁶ Tarde, *On Communication & Social Influence*, 277.

⁴⁷ Elihu Katz and Daniel Dayan, "Preface," in *Looking for Non-Publics*, ed. Daniel Jacobi and Jason Luckerhoff (Quebec City: Presses de l'Université du Québec, 2012).

⁴⁸ Tarde, *On Communication & Social Influence*, 277.

⁴⁹ Tarde, *On Communication & Social Influence*, 278.

⁵⁰ Elias Canetti, *Crowds and Power*, 29. Gilbert Simondon says it differently: "Any human act accomplished at the level of transindividuality is endowed with an indefinite power of propagation that confers upon it a virtual immortality" (Simondon 2005, 249).

⁵¹ In addition to "social psychologist," Tarde has been described as a criminologist and sociologist. However, what his interlocutors seem to agree on is that what he practiced, and the lens he used, is one akin to "psycho-sociology." Tarde expressed his own views on the necessity of understanding sociology through the lens of psychology: "psychology cannot be excluded from sociology as social processes consist, in the final analysis, of inter-mental relations." See Clark, *On Communication & Social Influence*, 16.

⁵² Tarde, *On Communication & Social Influence*, 285–286.

⁵³ Le Bon, *The Crowd*, 126.

⁵⁴ Douglas Guilbeault, Joshua Becker, and Damon Centola, "Complex Contagions: A Decade in Review" (2018), in Sune Lehmann and Yong-Yeol Ahn (eds.), *Complex Spreading Phenomena in Social Systems* (Springer Nature: forthcoming), <https://socialcontagionbook.github.io>; and Bruno Latour, "Tarde's idea of quantification," in Matei Candea (ed.), *The Social after Gabriel Tarde: Debates and Assessments* (London: Routledge, 2010), 145–162. Since the nineteenth century, social contagion theory has gone through many transformations, never really waning in critical interest and in fact only intensifying as we gain more knowledge of network culture's phenomenology and praxis as well a better understanding of sociobiological praxes. A few, more recent critical engagements with social contagion theory include: network-political theories, such as those of Tony Sampson, which tie Tarde to Deleuze's assemblage theories and present-day network ontology; Celia Lury, Luciana Parisi, and Tiziana Terranova's special issue in *Theory, Culture, and Society* devoted to exploring how culture is *becoming topological* by means of relational circuits of imitation and invention (2012); Elihu Katz's "contagion ecologies," in addition to more straightforward computational social science studies, such as Duncan J. Watts' *Everything is Obvious** (2011) and Damon Centola et al.'s "complex contagion theory," which studies how network topologies affect the dynamics of diffusion (c. 2007–ongoing).

⁵⁵ See Hippolyte Taine's five-part history of modern France, *The Origins of Contemporary France: The Ancien Regime* (Vol. 1), trans. John Durant (New York: Henry Holt and Company, 1876). The complete work, in six volumes, available at Online Library of Liberty, <https://oll.libertyfund.org/title/the-origins-of-contemporary-france>. Tarde talks about Taine in Gabriel Tarde, *The Laws of Imitation*, trans. Elsie Clews Parsons (New York: Henry Holt and Company, 1903), 74.

⁵⁶ See, for example: Jean Piaget, "The stages of the intellectual development of the child," *Bulletin of the Menninger Clinic* 26, no. 3 (1962): 120–128; Albert Bandura, *Social Learning Theory* (Englewood Cliffs, NJ: Prentice Hall, 1977).

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- ⁵⁷ Topics related to the development of imitation in infancy, including the neural mechanisms involved and the importance of social cues and context, and the role of motor planning and prediction in the process emerged in the research fields of neuroscience and child development in the late 1970s. For key historic readings, see Susan S. Jones, “The development of imitation in infancy,” *Philosophical Transactions of the Royal Society B Biological Sciences* 364, no. 1528 (August 2009), 10.1098/rstb.2009.0045.
- ⁵⁸ For example, see: Gabriel Tarde, *Social Laws: An Outline of Sociology*, trans. Howard G. Warren (Kitchener: Batoche Books, 2000); Tarde, *On Communication & Social Influence*, 223; in particular, see “The Laws of Society” in Tarde, *The Laws of Imitation*.
- ⁵⁹ Christian Borch, “The Exclusion of the Crowd: The Destiny of a Sociological Figure of the Irrational,” *European Journal of Social Theory* 9, no. 1 (2006): 83.
- ⁶⁰ David Toews, “The New Tarde: Sociology After the End of the Social,” *Theory, Culture & Society* 20, no. 5 (2003): 93. Tarde and Durkheim were contemporaries who famously battled for intellectual territory in the emerging field of sociology; it has been long maintained that Durkheim won.
- ⁶¹ Clark, *On Communication & Social Influence*, 16.
- ⁶² Chief among them would be Latour’s encounters with Tarde, but also Toews, Borch, Thrift, Katz, Sampson, et al.
- ⁶³ Tarde, *The Laws of Imitation*, 75.
- ⁶⁴ Tarde, *The Laws of Imitation*, 74 and 87.
- ⁶⁵ See Tarde’s preface in the second edition of *The Laws of Imitation*.
- ⁶⁶ Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, trans. Thomas Burger with Frederick Lawrence (Cambridge, MA: The MIT Press, 1991), 5.
- ⁶⁷ Taine, *The Origins of Contemporary France*.
- ⁶⁸ Habermas, *The Structural Transformation of the Public Sphere*, xvii.
- ⁶⁹ Habermas, *The Structural Transformation of the Public Sphere*, 3–4.
- ⁷⁰ Habermas, *The Structural Transformation of the Public Sphere*, xi.
- ⁷¹ Habermas, *The Structural Transformation of the Public Sphere*, 10–11. A few pages later, Habermas uses an observation made by Goethe that the nobleman of the Middle Ages was what he represented; the bourgeois, “compelled to be,” was actualized by what he produced (see 13–14).
- ⁷² Habermas, *The Structural Transformation of the Public Sphere*, 23.
- ⁷³ Habermas, *The Structural Transformation of the Public Sphere*, xi.
- ⁷⁴ Habermas, *The Structural Transformation of the Public Sphere*, 22–23.
- ⁷⁵ Jürgen Habermas, “For A Democratic Polarisation: How to Pull the Ground from Under Right-wing Populism,” in *Social Europe*, November 17, 2016, <https://www.socialeurope.eu/democratic-polarisation-pull-ground-right-wing-populism>. This interview was conducted by and first published in *Blätter für deutsche und internationale Politik*. Translation by David Gow.
- ⁷⁶ Habermas, *The Structural Transformation of the Public Sphere*, 249.
- ⁷⁷ Stuart Jeffries, “A rare interview with Jürgen Habermas,” *Financial Times*, April 30, 2010, <https://www.ft.com/content/eda3bcd8-5327-11df-813e-00144feab49a>.
- ⁷⁸ Habermas, *The Structural Transformation of the Public Sphere*, 175.
- ⁷⁹ Habermas, *The Structural Transformation of the Public Sphere*, 175.
- ⁸⁰ Habermas, *The Structural Transformation of the Public Sphere*, 8; see also 10–11.
- ⁸¹ See Oskar Negt and Alexander Kluge, *Public Sphere and Experience: Toward an Analysis of the Bourgeois and Proletarian Public Sphere*, trans. Peter Labanyi, Jamie Owen Daniel, and Assenka Oksiloff (Minneapolis and London: University of Minnesota Press, 1993/1972), 14.
- ⁸² According to Le Bon and Tarde, irrationality is the driving force of crowds; it is a specific phenomenon that occurs by contagion, or suggestion, to the ephemeral entity constituted as a “collective mind.” See Christian Borch, “The Exclusion of the Crowd: The Destiny of a Sociological Figure of the Irrational,” *European Journal of Social Theory* 9, no. 1 (2006): 83.
- ⁸³ Seyla Benhabib, “The Embattled Public Sphere: Hannah Arendt, Jürgen Habermas, and Beyond,” *Theoria: A Journal of Social and Political Theory* 90 (December 1997): 1–24.
- ⁸⁴ Wendy Hui Kyong Chun, *Control and Freedom: Power and Paranoia in the Age of Fiber Optics* (London and Cambridge, MA: The MIT Press, 2006), vii.
- ⁸⁵ John Budarick, “The elasticity of the public sphere: Expansion, contraction and ‘other’ media,” in *Making Publics, Making Places*, ed. Mary Griffiths and Kim Barbour (Adelaide: University of Adelaide Press, 2016), 9.

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- ⁸⁶ Jodi Dean, “Why the Net is Not a Public Sphere,” *Constellations* 10, no. 1 (2003): 96.
- ⁸⁷ For example, Pieter Boeder, “Habermas’ Heritage: The Future of the Public Sphere in the Network Society,” *First Monday* 10, no. 9 (September 5, 2005), <http://firstmonday.org/article/view/1280/1200>.
- ⁸⁸ Habermas, *The Structural Transformation of the Public Sphere*, 195.
- ⁸⁹ Dean, “Why the Net is not a Public Sphere.”
- ⁹⁰ Habermas, *The Structural Transformation of the Public Sphere*.
- ⁹¹ Habermas, *The Structural Transformation of the Public Sphere*, 4.
- ⁹² Edward L. Bernays, “The Engineering of Consent,” *The Annals of the American Academy of Political and Social Science* 250, no. 1 (1947): 113–120.
- ⁹³ Edward L. Bernays, *Propaganda* (New York: Horace Liveright, 1928), 52–53.
- ⁹⁴ Tarde, *On Communication & Social Influence*, 284. Italics are my emphasis.
- ⁹⁵ Gilles Ivain [Ctcheglov], “Formulary for a New Urbanism” (1953). This translation is from *Situationist International Online*, trans. Kenn Knabb, <https://www.cddc.vt.edu/sionline/presitu/formulary.html>. The original was published in *Internationale Situationniste #1* (October 1953).
- ⁹⁶ Tarde, *On Communication & Social Influence*, 286.
- ⁹⁷ Tarde, *On Communication & Social Influence*, 282.
- ⁹⁸ Sampson, *Virality*, 21.
- ⁹⁹ Tarde, *On Communication & Social Influence*, 283.
- ¹⁰⁰ Tarde, *On Communication & Social Influence*, 283.
- ¹⁰¹ Bernays, *Propaganda*, 9.
- ¹⁰² Bernays, *Propaganda*, 49.
- ¹⁰³ Marshall McLuhan, *Understanding Media: The Extensions of Man* (Cambridge, MA and London: The MIT Press, 1994/1964), 3–4.
- ¹⁰⁴ Tabitha Kirkland and William A. Cunningham, “Neural basis of affect and emotion,” *WIREs Cognitive Science*, Vol. 2 (Nov/Dec 2011): 656–665.
- ¹⁰⁵ Antonio R. Damasio, *Descartes’ Error: Emotion, Reason, and the Human Brain* (New York: Avon Books, 1994), xiii. Albeit it’s still referred to by Damasio—here, in the mid-1990s—in terms of higher and lower function; higher being reason, lower/base being emotional.
- ¹⁰⁶ Damasio, *Descartes Error*, xv.
- ¹⁰⁷ Brian Massumi, *The Power at the End of the Economy* (Durham and London: Duke University Press, 2015), 86.
- ¹⁰⁸ Massumi, *The Power at the End of the Economy*, 86.
- ¹⁰⁹ Tarde, *The Laws of Imitation*, 70.
- ¹¹⁰ Tony D. Sampson and Jussi Parikka, “Tarde as Media Theorist: An Interview with Tony D. Sampson,” *Theory, Culture & Society*, January 25, 2013, <https://www.theoryculturesociety.org/blog/tarde-as-media-theorist-an-interview-with-tony-d-sampson>.
- ¹¹¹ Tarde, *On Communication & Social Influence*, 280.
- ¹¹² Tarde, *On Communication & Social Influence*, 289.
- ¹¹³ Sampson, *Virality*, 4 and 6.
- ¹¹⁴ Sampson, *Virality*, 4–6.
- ¹¹⁵ Sampson, *Virality*, 170. Sampson writes, “Tarde’s notion of hypnotic obedience reveals a complex reciprocal relationship in which subjects are not simply controlled by deep seated fears and phobias but also tend to copy (on the surface) those whom they love or at least empathize with. It is *this mutuality established between hypnotizer and a hypnotized subject that seems to underpin Tardean social power relations in general.*” [Emphasis mine.]
- ¹¹⁶ Sampson, *Virality*, 171.
- ¹¹⁷ Sampson, *The Assemblage Brain*, 194.
- ¹¹⁸ Sampson, *Virality*, 165. [Emphasis mine.]
- ¹¹⁹ See Sampson, *The Assemblage Brain*, 92.
- ¹²⁰ Sampson, *The Assemblage Brain*, 88; Sampson, *Virality*.
- ¹²¹ Tony D. Sampson, *A Sleepwalker’s Guide to Social Media* (Cambridge and Medford, MA: Polity Press, 2020), 164.
- ¹²² Gabriel Tarde, *Social Laws: An Outline of Sociology*, trans. Howard C. Warren (Kitchener, ON: Batoche Books, 2000), 93.
- ¹²³ Clark, *On Communication & Social Influence*, 22.

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- ¹²⁴ Tarde, *Social Laws*, 54. The laws of imitation as they apply to social life: repetition, difference, variation.
- ¹²⁵ Seth Maxon, “How Sleep Deprivation Decays the Mind and Body,” *The Atlantic*, December 30, 2013, <https://www.theatlantic.com/health/archive/2013/12/how-sleep-deprivation-decays-the-mind-and-body/282395/>; see also McGill University’s “The Brain from Top to Bottom,” https://thebrain.mcgill.ca/flash/i/i_01/i_01_m/i_01_m_ana/i_01_m_ana.html. These “shared neurotransmitters” include acetylcholine, norepinephrine, and serotonin.
- ¹²⁶ Crary, 24/7, 33–34.
- ¹²⁷ Crary, 24/7, 37.
- ¹²⁸ Crary, 24/7, 43.
- ¹²⁹ Deleuze and Guattari, *A Thousand Plateaus*, 235.
- ¹³⁰ Crary, 24/7, 128 and 32.
- ¹³¹ Jonathan Crary, *Scorched Earth: Beyond the Digital Age to a Postcapitalist World* (London and New York: Verso, 2022), 1–2.
- ¹³² Erika Biddle, “Freedom and Torture: The New Architecture of Domination and Refusal,” *Communicado & Cultura* 15 (2013): 73–88.
- ¹³³ The circulation of memes has recently been of particular concern to social psychologists and neuroscientists. See, for one brief example: Ira E. Hyman, “The Menace of Memes,” *Psychology Today*, October 31, 2019, <https://www.psychologytoday.com/us/blog/mental-mishaps/201910/the-menace-memes>.
- ¹³⁴ It is as Walter Benjamin said of this as a thoroughly modern phenomenon: “*The public is an examiner, but an absent-minded one.*” See Walter Benjamin, *Illuminations*, trans. Harry Zohn (New York: Schocken Books, 2007/1968), 241. This isn’t a critique of the distracted public, but a new way of relating to the world in “the age of mechanical reproduction.” Benjamin associates distraction with “habit” and a new means for dealing with “perceptual shock”: “For the task which face the human apparatus of perception at the turning point of history cannot be solved by optical means, that is, by contemplation, alone. They are mastered by habit, under the guidance of tactile appropriation.” See Benjamin, *Illuminations*, 240. These habits, kind of like ‘thinking on the go’—are precursors to ship-and-iterate habits.
- ¹³⁵ Ian Bogost, “The Metaverse Is Bad,” *The Atlantic*, October 21, 2021, <https://www.theatlantic.com/technology/archive/2021/10/facebook-metaverse-name-change/620449/>. Emphasis added.
- ¹³⁶ Emphasis is mine. All Zuckerberg quotes in this final section are from his “Founder’s Letter” (or keynote), originally appearing on Facebook, October 28, 2021, <https://about.facebook.com/meta/>.
- ¹³⁷ Julia Carrie Wong and Botnik Studios, “I do surfing’: An AI-generated Mark Zuckerberg on Facebook’s bad year,” *The Guardian*, December 27, 2021, <https://www.theguardian.com/technology/2021/dec/27/mark-zuckerberg-ai-robot-metaverse-facebook>.
- ¹³⁸ Bogost, “The Metaverse Is Bad.”
- ¹³⁹ Kandice Chuh, *The Difference Aesthetics Makes: On the Humanities “After Man”* (Durham: Duke University Press, 2019), 3. Also see David Lloyd, *Under Representation: The Racial Regime of Aesthetics* (New York: Fordham University Press, 2019).
- ¹⁴⁰ C. Wright Mills, *The Power Elite* [New Edition] (New York: Oxford University Press, 2000), 3.
- ¹⁴¹ Ray Kurzweil, “Escapism with VR: Digital Fantasy as a Shield from Stark Reality,” *ArviVR*, June 26, 2020, <https://vr.arvilab.com/blog/escapism-vr/>.

¹⁴² These are not new pathologies nor new pathogeneses. It's been a trope since the onset of capitalism that the being bourgeois makes people sick (e.g., "neurasthenia," "Americanitis" [see Chapter 7 of this dissertation], and endocrinologist Hans Selye's idea of "general adaptive syndrome" or "stress"). Now, the need for and reliance upon continuous, somewhat automated self-control and the anxieties of always-on connectivity and acquisitiveness are coupled with and intensified by the beyond-human speeds and drives of communicative technologies, providing "new opportunities" for mental and physical conditions to injure and immobilize workers, users, consumers, etc. These include attention and addiction disorders, depression, anxiety, obsessive-compulsive disorder, and post-traumatic stress disorder (PTSD), but even heart conditions and other regulatory failures (e.g., autoimmune diseases). On the direct relation between emotional and psychological trauma and physical illness, there is a vast amount of research investigating causal links between PTSD and "idiopathic" conditions, such as fibromyalgia, autoimmune diseases (e.g., psoriasis, lupus, celiac), and wide-ranging physiological, behavioral, emotional, and cognitive stresses. For a sociohistorical overview of "stress," see: Fabian Huttmacher, "Putting Stress in Historical Context: Why It Is Important That Being Stressed Out Was Not a Way to Be a Person 2,000 Years Ago," *Frontiers in Psychology* 12 (2021), <https://doi.org/10.3389/fpsyg.2021.539799>.

METHODS FOR PLASTIC PUBLICS (THE DISSERTATION)

Our lived world is so ready-at-hand that we have no deliberateness about what it is and how we inhabit it. —Francisco J. Varela, *Ethical Know-How* (1992)

[T]he molecular revolution is not something that will constitute a program. It's something that develops precisely in the direction of diversity, of a multiplicity of perspectives, of creating the conditions for the maximum impetus of processes of singularization. It's not a question of creating agreement; on the contrary, the less we agree, the more we create an area, a field of vitality in different branches of this phylum of molecular revolution, and the more we reinforce this area.
—Félix Guattari, "Pragmatic/Machinic" (1985)

Mutant Methods

If it wasn't already clear, this project refuses categories given by traditional research methodologies. It builds upon and draws from an already heterodox corpus of nontraditional, nonnormative qualitative research inquiry: for example, Félix Guattari's concept and clinical tool of transversality and its ongoing mutations in new materialisms; the anti-method approach of post qualitative inquiry as it has been proposed and purposed by Elizabeth Adams St. Pierre; "research-creation" as it is currently defined¹; my own experiences with thinking about and writing and editing texts about collective intelligence, constituent imagination, and a commonist horizon.² Mutant methods are always appearing, always being invented out of necessity of how to engage with concepts and relations grounded in everyday living. Of note, some mutant methods in dissertations of recent vintage are Alessandra Renzi's use of "cartography" (2011) to map and locate connections between different conceptual and activist assemblages³; Tero Karppi's connectivist use of "remix" (2014)—after DJ Spooky/Paul Miller's conceptualization of it as a "rhythm science . . . the creation of art from the flow of patterns in sound and culture, the 'changing same'" (2004)—to "illustrate different cultural practices built around process of combining different things and building new meanings through these assemblages"⁴; and Franco Berardi's

conjunctive and “rhizomatic” methodology (2014), in which “meaning emerges from a vibration, which is singular in its genealogy and can proliferate and be shared.”⁵

This dissertation’s inquiry into the production and shaping of subjectivity via neuroplastic techniques and technologies concerns new possibilities for becoming and also social configurations, coordinations, and situations—the plastic publics—that have yet to be defined. In doing so, it takes into consideration Isabelle Stengers’ recommendation that when we deal with tools for thinking, habit must be resisted. According to Stengers—who echoes Guattari’s admonition that philosophical concepts are tools that transform, or *mutate*, to the task at hand—“an ecology of practices does not have any ambition to describe practices ‘as they are’. . . . It aims at the construction of new ‘practical identities’ for practices, that is, new possibilities for them to be present, or in other words to connect. It thus does not approach practices as they are . . . but as they may become.”⁶ This dissertation takes to heart the ecosophical view of the world and ourselves as a collective work in progress; this means collectively working in simultaneous, interdependent, intra-acting transversal processes. This chapter is an invitation to think critically about inquiry, methods, disciplinarity, learning and writing habits, education systems, institutions, “normapathies”⁷ and “ambient computation”⁸—and the hypercomplex social relations between and beyond these that become problems of method and transformations of method.⁹

As an approach, post qualitative inquiry involves the researcher in a uniquely central way—the researcher is not a contaminant but “is accepted as part of the social. To acknowledge the self is to acknowledge research that tends to affectivity.”¹⁰ According to Konstantinos Kerasovitis, “this is the rubric that post qualitative seeks to cross. By tending to openness, by making pre-stating a method obsolete, and by considering the researcher as a social being.”¹¹ In his scholarly exploration of post qualitative inquiry, Kerasovitis presents case studies of doctoral students successfully defending their post qualitative dissertations to establish a common ground of post qualitative praxis:

All researchers share work that is grounded in the work of Deleuze and Guattari, making supple use of Deleuzian figurations to probe their subjects, and all tackle work that is steeped in complexity, not examining isolated phenomena, but an entanglement.¹²

“Entanglement” refers to Karen Barad’s argument that quantum theory radically reveals an entangled, continually intra-acting reality, specifically in *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (2007). Barad calls for an ethico-onto-epistemology, to mark the inseparability of, and “an appreciation for the intertwining of ethics, knowing, and being,” because “[w]e are not merely differently situated in the world; ‘each of us’ is part of the intra-active ongoing articulation of the world in its differential mattering.”¹³ The expanded ‘media ecologies’ approach which I have also learned from and employed is premised on an ethico-aesthetic understanding of the various ways media are articulated together with politics, capitalism, and nature, and that processes of media and technology cannot be detached from subjectivation.

In addition to adopting research-creation, post qualitative inquiry, and media ecological thought, this dissertation engages strategies from Joseph Beuys’ “search for field character,” a fluid concept of artistic-research creation and social organization which: (a) acknowledges we inhabit a world of flux; (b) disavows existing hierarchies to include the most widespread participation in knowledge production possible; (c) is an ongoing imaginative process of discovery and connection; (d) doesn’t aim to comprehend the world as it is, or to instruct others on how to be in the world, but to understand the world as sculpture and our work as evolutionary as we shape the world we live in. Beuys elaborates: “Every living person becomes a creator, a sculptor, or an architect of the social organism.”¹⁴ He called this work “social sculpture,” which uses forces of social feedback to shape the most open inquiry possible into present cultural, political-economic, and sociotechnological problems and imagined futures. Regarding Beuys’ practice, and his method, curator Pamela Kort writes: “Rather than advocating invention, he believed it was the artist’s task to discover connections and expand on them.”¹⁵ Beuys imagined social sculpture as potentially having the capacity to heal public wounds: “When one speaks of the sociableness of man [sic], one has to know that suffering and showing compassion are the actual prerequisites for becoming a social being.” This is important to learning, as is paying attention to and developing awareness of the relations entangled in every study, every disciplinary enclave, and to re-orient learning and education “away from exploitation and domination and towards justice.”¹⁶ Culling

together these minor approaches to inquiry, this dissertation engages *transversal transdisciplinarity* to probe the subject of plastic publics.

The Problem of Transdisciplinarity

What I am interested in is *practice*, the *plurality* and *diverging* character of practices.
— Isabelle Stengers¹⁷

For the Presocratic philosopher Anaxagoras, in the beginning of the cosmos there were two principles infinite and everlasting in nature: Mind [*Nous*] and the Primeval Mixture [*Migma*]. In the beginning ‘everything was in everything.’ Leibniz saw scientific inquiry as an ocean “continuous everywhere and without break or division” (1690). In the centuries since, systems theorist Ervin László observes, “poets such as John Donne and William Blake have sung of our oneness with nature, and a handful of scientists, such as William James, Abraham Maslow, Gregory Bateson, and Arne Naess, have sought a detailed understanding of it.”¹⁸ Why does transdisciplinarity remain a problem for communication and culture research in 2023?

This section begins in earnest with an observation made by Peter Osborne, one of the editors of a special issue on transdisciplinarity in *Theory, Culture & Society* in 2015: “*Disciplinarity has become problematic in multiple and contested ways.*”¹⁹ A cursory glance through the table of contents for the last three editions of the *SAGE Handbook of Qualitative Research* (2005, 2011, 2018) reveals a distinct shift from “grounded” and often situated research to movement-focused reflexive inquiry and beyond, to a horizon of post-qualitative research methodologies, postphenomenological methodologies, and “performative research.”²⁰ There seems to be a great deal of movement in the academy towards transdisciplinary and interdisciplinary thought. Yet, in practice, as Erin Manning asserts in *The Minor Gesture*—a book problematizing neurotypical understandings of perception, action, and embodiment that begins with a chapter titled “Against Method”: “Despite decades of engagement in transdisciplinary thought, disciplines still tend to order knowledge according to specific understandings of what constitute proper methods, policing these methods through long-standing systems of peer and institutional review.”²¹ “Against Method” (in *The Minor Gesture*) is a clear nod to Paul Feyerabend’s *Against Method: Outline of an Anarchistic Theory of Knowledge* (1975), one of the

first books in the philosophy of technology to acknowledge that contemporary science had a “methodological monism” problem and “late modern” problems, such the social and epistemic authority given to science—and its enjoyment of certain honorific features, such as being taken for granted as “value free” whereas other fields are not—had undermined its validity, in addition to its unethical resistance to acknowledge its social character.²² As Feyerabend detailed in his 1993 revised preface to the third edition of *Against Method*, “as I wrote in the first edition of *AM*: ‘Creation of a *thing*, and creation plus full understanding of a *correct idea* of the thing, *are very often parts of one and the same indivisible process* and cannot be separated without bringing the process to a stop.’” He also discusses how there is a nuanced social tapestry undergirding everything about the writing of the book—it is a letter to a friend (Imre Lakatos), a nonsystemic treatise, a “collage” and a “conversation”; the title itself is an inside joke among friends.²³ What is legible and what is not, what undergirds the text, he argues, is not probed at the critical level of encounter—at the molecular level of detail—and this remains a problem today. At the time, Feyerabend expressed concern amongst philosophers of science that insufficient attention was being given to science’s entanglements with the environment, culture, and social and epistemic ideas of authority, among other concerns, and this put science’s relevance into question, this lack of criticality, openness or “pluralism,” complexity, and self-knowledge. Perhaps this problem is even worse today, as constant information overwhelm provides optimal conditions for, and conditions practices of, inattentiveness and distraction.

The editors write in the introduction to the fifth edition of the *SAGE Handbook* (2018), “The global community of qualitative inquiry is midway between two extremes, searching for a new middle, moving in several directions at the same time.”²⁴ There is consensus that qualitative methods that were introduced in the 1970s and 1980s to counter the historical positivism of the social sciences are being “pushed back to positivism with normalized and formalized practices.” At the same time, qualitative methodologies are being actively reviewed and renewed for more nuanced understandings. This edition of the *Handbook for Qualitative Methods* is encyclopedic; there’s literally a method for everyone. Nevertheless, the subsequent issue will inevitably revise existing entries and introduce a slew of new ones that arrive already too late, without ever directly addressing and confronting the institutional politics a legible body of qualitative research methods

maintains.

Transdisciplinarity is not a new or emergent approach.²⁵ In the institutional setting of the university, transdisciplinarity is whatever “integrates the natural, social and health sciences in a humanities context, and transcends their traditional boundaries.”²⁶ It is an integrative research method but it is not situated: it is, as Guattari referred to it, *intradisciplinary*. There is no single working model for transdisciplinary research, there is no singular transdisciplinary heuristic or context, and “there is no general pedagogy relative to the constitution of a living transdisciplinarity.”²⁷ A unifying tenet of the different transdisciplinarity is that human learning is ontogenetic—it is affected by our subjective experience.

Transdisciplinarity as transversality

Transdisciplinarity emerged and developed institutionally in the field of antipsychiatry and psychology in France as a concept and practice of institutional critique. Guattari applied the principle of transversality to his organizational work at La Borde in the 1960s, identifying eight conditions for a transdisciplinary methodology in clinical work:

1. Call into question a given discipline’s ability to understand the globality within which it finds itself;
2. Adopt a humble attitude in the face of the immense field of knowledge of the real;
3. Open one’s own assemblages toward heterogeneous fields of dialogue and other forms of mutual exchange;
4. Do not abandon specialization as an ideological principle but, rather, proceed irreversibly by fluctuation and bifurcation toward transdisciplinarity, each discipline according to its own speed and willingness to make sacrifices or suffer ‘amputations’;
5. Certain theoretical approaches will need to be deconstructed, but hopefully not in an anarchic way, so that existing disciplines may see the confluence of concepts and problems from a new theoretico-pragmatic and virtual perspective;
6. The creation of numerous cross-references is not heresy but has always existed to some extent;
7. From a critical interdisciplinary perspective, certain scientific positions of

alleged self-sufficiency and omnipotence will be subject to definitive critique (no more queen of the sciences, more pure [higher] than applied [lower], etc.);

8. *Intradisciplinary* graspings of the virtualities of heterogenous, evolving fields will have repercussions for the movement toward transdisciplinarity.²⁸

In short: given the institutionalization and internalization of roles, expertise and affects, the individual researcher is advised to be humble, welcome failure, be open and receptive to others' assemblages, be aware of multi-scale interactions and mutations, and deconstruct meaningfully toward transformative becoming. Transversality has long been practiced by social movements and in anti-institutional critique, and it has reemerged in the past few decades as a new materialist concept for sociality and adaptation that, in the context of academia, cuts not only across disciplinary boundaries but "across both text and matter"; it is a tool that eludes and substitutes dualisms because transversality "involves processes of becoming rather than being simply a new method (of, say, overcoming dualisms)."²⁹

Learning-centered approaches: Jean Piaget and Maria Montessori

Transdisciplinarity became more prominent in mainstream institutions with Swiss psychologist Jean Piaget, well known for his work in early child development. In 1970, Piaget introduced the term "transdisciplinarity" at a pedagogy conference where educators and researchers gathered to critique the impact of specialization and "disciplinary-mindedness" on scientific research. As a group, they advocated for a more complex synthesis of knowledge as well as more open collaboration across disciplines to better understand the role of social knowledge in science and the growing impact of sciences and technologies on society.³⁰

In his clinical work with children, Piaget advocated a learner-centered approach, urging to show how children progressively enrich their understanding of things. By acting on and reflecting on the effects of their own previous knowledge, they are able to organize their knowledge in increasingly complex structures. This is how early childhood educator innovator Maria Montessori describes her pedagogical method: *train students from a young age to be experimental*.³¹ Montessori's work had a huge impact on Piaget, and her approach has shaped much of today's play-based learning (and the markets of mass-produced commodities it eschewed, it now sustains).

In sum: learning occurs as the result of experience, in particular, via *cooperative peer-relations* or rather, relations that are open, flexible, and regulated by the logic of the inquiry rather than being determined by an external authority. For example, Piaget proposed: “Education, for most people, means trying to lead the child to resemble the typical adult of his society . . . but for me and no one else, education means making creators. . . . You have to make inventors, innovators—not conformists.”³² The models of productive dissensus for transdisciplinarity that Guattari introduces—that can be antagonistic and wherein even the most catastrophic deterritorializations can provide occasion for the most extraordinary reterritorializations—are presented here for the cultivation of a topological imagination.

Ecological thought and pattern recognition

At the time of transdisciplinarity’s institutional emergence, “the interconnectedness of many seemingly disparate things” via the concept of *Nous* or “*ecological thinking*”—was experiencing a social zeitgeist, elaborated by public intellectuals such as Marshall McLuhan, Alan Watts, R. Buckminster Fuller, Christopher Alexander, Warren S. McCulloch, Ludwig von Bertalanffy, Gregory Bateson, and others.³³

During this period, anthropologist, systems theorist, and cybernetician Gregory Bateson also published critical texts about disciplinary separations within the university and how they are architected by an old, worn Cartesian methodology that emphasizes reduction and disjunction. He argued that it is precisely through reduction and disjunction that we take our subject out of its context—out of the complex network of relationships and the ecology that sustains it. The aim of transdisciplinary research is thus to be aware of and question the content of various disciplinary approaches to issues, their underlying assumptions or paradigms—including one’s own—and how these paradigms shape the inquiry. Bateson, in what remains a powerful tool for transdisciplinary thought, called for *a pervasive reshaping of patterns of thought* so that minds and the systems they occupy—theory and practice—could coevolve in mutually constructive ways. The sociotechnological problems confronting society required complex or ecological thinking, with attention to the patterns that “emerge only in a broad-spectrum analysis of communication in all its forms.”³⁴

In *Speed & Politics*, Paul Virilio recognized pattern recognition as the coming cultural form of observation in control societies. A first mechanism of modulation, and thus newer forms of control, is the recognition of patterns. Interestingly we are seeing defective pattern recognition—i.e., apophenia and patternicity, different forms of information incontinence—as the disease underlying the social virus of conspiracy theories and “Q rabbit holes,” and which, Bateson proposed, is a common trait of schizophrenia.

The systems approach to pedagogy

Another introduction to transdisciplinarity is attributed to Austrian systems scientist Erich Jantsch. Between 1969 and 1972, the European junior scholar developed a redesign of the educational policy of his host institution MIT specifically, and the American university in general, from a “pragmatic” system of discrete disciplines and departments to an adaptive system shaped by feedback between systems-design laboratories, function-oriented departments (concerned with functions or missions of technology in the context of societal systems), and discipline-oriented departments.³⁵

Jantsch noted that institutional change always occurs as a “delayed response to increasing pressures resulting from environmental change.”³⁶ He was influenced by radical student movements in Europe and the US and the critical problem of education being part of a system that wasn’t systems oriented. He proposed the university needed to make structural changes within itself to better enable feedback between science, education, social innovation, and “general purposeful activity” and enhance “society’s capability for continuous self-renewal.”³⁷

Transdisciplinarity, Jantsch wrote in 1969, is “broad, horizontal thinking across the disciplines.”³⁸ Jantsch proposed a transversal approach that would transform researchers from passive and atomized consumers of information and knowledge into active and collaborative agents investigating and anticipating the dynamic developments of sociotechnological systems, with their modulations of boundaries into interfaces requiring transformations in cognition, communication, control, etc. Transdisciplinarity, is distinguished from the following approaches by Jantsch:

1. Disciplinarity is specialty in isolation;

2. Multidisciplinarity signifies no cooperation between disciplines;
3. “Pluridisciplinarity” is cooperation without coordination;
4. Crossdisciplinarity involves rigid polarization towards a specific monodisciplinary concept;
5. Interdisciplinarity is coordination of discrete disciplines by a higher-level concept.

Transdisciplinarity is the synepistemic, multigoal, multilevel coordination of the entire education/innovation system.³⁹ Synepistemic refers to thinking with, and thinking across, disciplines “to mobilize all energies and all knowledge for a concerted effort to shape actively our future.”⁴⁰ It is an extra-disciplinary way to transform the knowledge economies of the university into a “learning community”⁴¹ responsive and responsible to the changing needs of society. It animates and vitalizes the whole sociotechnical system towards “evolutionary rather than revolutionary” goals.⁴²

Transdisciplinarity was introduced specifically at a time when rapid social and technological change proffered that the existing educational system might no longer be relevant.⁴³ Jantsch held the viewpoint that the task at hand was *nothing less than to build a new society and new institutions for it*.⁴⁴ The systems theory approach is not as distinct from the academic radicalism that brought transdisciplinarity into contact with anti-disciplinarity, post-disciplinarity and de-disciplinization, though they tend to be addressed as distinct.⁴⁵

Transgression / Institutionalization

Discussions of how to facilitate transdisciplinarity as practice always proliferate during moments of crisis, or as Julie Klein states more narrowly, at moments of crisis “in the discourse of human rights accountability.”⁴⁶ In the late 1980s and early 1990s, educators Stanley Fish, Douglas Kellner, and Jill Vickers pushed for a “philosophical” and practical reconfiguration of the university’s regimented disciplinary approach, arguing like Jantsch that its modes of knowledge, discourse, and institutional frameworks were no longer relevant in an increasingly complex, sociotechnical global culture. They proposed pedagogy become more responsive to ‘real-world’ problems—both within and beyond the academy.

In 1992, Guattari writes, “everyone is aware that the complexity of the objects of research in the domain of the human and the environmental sciences demands an interdisciplinary approach. But the encounter between disciplines does not permit a decompartmentalization of the problematics and modes of expression brought together.”⁴⁷ By the mid-1990s, transdisciplinarity had been formalized into three divergent discourses:

1. The first, dating from Basarab Nicolescu’s *Charter of Transdisciplinarity* (1994), is associated with disciplinary transcendence or “metadisciplinarity”;
2. The second, with the publication of Michael Gibbons’ *The New Production of Knowledge* (1994), which later culminated in the “Zurich approach” and “Mode 2 thinking” (c. 2000);
3. The third is the transgressive project to deterritorialize institutions, to open up the academic project to be able to respond to social crises (rather than being “hamstrung by its disciplinary forms”⁴⁸).

Nicolescu’s *Charter of Transdisciplinarity* (1994) presented a three-pillared methodological foundation for transdisciplinary research: epistemological, practical, and ontological. “Transdisciplinarity does not strive for mastery of several disciplines but aims to open all disciplines to that which they share and to that which lies beyond them” (see Article 3, *Charter of Transdisciplinarity*, 1994). It is not perceived as a “new” or “super” discipline but as a way to create new knowledge that addresses complexity and understanding the world from a scientific, systemic, and holistic perspective. The systems paradigm demands that we master the desire for mastery (as Michel Serres has urged), which opens up for us forms of action which necessarily entail self-consciousness and self-control.

Gibbons’ book advocates a pragmatic approach for working collaboratively across disciplines (the sciences and humanities) to “joint problem solve” complex real-world issues as they emerge in real time. The Zurich approach emphasizes the necessity of interaction across disciplines. Instead of three axioms of methodology, its bases are described as “the two modes of knowledge.” Mode 1 refers to the traditional way of creating knowledge within disciplines, in which “problems shaped by the interests of the academic community [and] largely divorced from the world.”⁴⁹ Mode 2 is its antithesis: it is “problem solving on the move”⁵⁰ that is heterogeneous and can involve a transient or changing social composition of researchers; creativity, innovation

and a process of knowledge creation are “viewed as a cumulative process beyond disciplinary maps.”

The transgressive project, usually dated as “post-1960s” but ongoing, was forged in critique of the existing system of knowledge and education. Transdisciplinarity became aligned with imperatives of cultural critiques and “wars,” social movements, and conceptions of post-normal science and “wicked problems” that break free of reductionist and mechanistic approaches to scientific inquiry. It also became a premise or catalyst for interdisciplinary fields; cultural studies, women’s and gender studies, urban studies, and environmental studies “arrived at a moment of wider crisis in the privileging of dominant forms of knowledge, human rights accountability, and democratic participation.”⁵¹

Cary Wolfe’s *What is Posthumanism?* investigates the disciplinarity, inter- and transdisciplinarity involved in the “academic assimilation of the so-called new social movements . . . that have fundamentally reshaped the study of society and culture over the past thirty years or more.”⁵² Transdisciplinarity poses challenges to models of subjectivity, experience, and epistemology and “calls us to rethink questions of ethical and political responsibility within . . . a fundamentally posthumanist set of coordinates.”⁵³ This is only in part what transdisciplinarity must do. As Peter Osborne observed a few years ago, “The established literature on transdisciplinarity lacks an account of the internal dynamics of specifically transdisciplinary concepts—or concepts in their transdisciplinary functioning—beyond the idea that they address problems rather than disciplinary objects. And it has no developed concept of a problem.”⁵⁴ Wolfe invokes Foucault’s work in the early 1960s–late 1970s (specifically, *The Order of Things*, *The Archaeology of Knowledge*, and *Discipline and Punish*) to point out: “disciplines do not derive their constitutive protocols from their objects of attention. . . . Disciplines constitute their objects through their practices, theoretical commitments and methodological procedures.”⁵⁵

In his canonical critique on disciplinarity, “Being Interdisciplinary Is So Very Hard to Do” (1989), Stanley Fish (drawing upon Michael Ryan) observes that disciplines are microcosms of discursive regimes beyond the university’s walls. He writes: “The university is a locus of forces which constitute the university as a point of intersection in a broad field which defies any single or ultimate determination. The interior or essence of the university is constitutively impugned by

what is supposedly ‘exterior’ to it.”⁵⁶ Fish also draws upon Shoshana Felman to make a complementary observation that because we inhabit a discursive system that constructs and reproduces these divisions, we cannot distance ourselves enough from it to not hear it or speak it, and we are doomed to produce “a knowledge which does not know what it knows, and is thus not in possession of itself.”⁵⁷ For this reason, Fish argued in 1989 that interdisciplinarity was impossible.

Fish, and later Barad and Stengers each argue, in their own terms, that there is no ‘authentic’ way to be inside of a discipline, to critically reflect on it, *and* to do an audit of one’s performative research within and across disciplines. There are limits to what can be accomplished when academics calling for pedagogical redesign maintain some vague allegiance to knowledge as “frozen in a form supportive of the status quo,” which Fish attributed to an “ideological hardening of the arteries . . . abetted by a cognitive map in which disciplines are represented as distinct, autonomous, and Platonic.”⁵⁸ It remains a problem, even among left or militant researchers, to reproduce “the conservative habit of thinking in terms of such binaries which make a norm of some ideal model of self-possessed self-identity (‘integrity’) and treat anything which doesn’t cohere with the model as a derivative deviation or degradation.”⁵⁹ It’s a painful yet inescapable truth or truths as it were. When we uphold the view of interdisciplinary research as transactional—for example, as: the importation of our project “into the machinery of other practices”; or as using techniques or disciplinary information that is “on loan” from other disciplines; or as participating in the “annexation” of other disciplines, we are reifying disciplinary thinking, as opposed to engaging ecological or transversal thinking.⁶⁰

I have experienced this institutional resistance to transdisciplinary thought with attempts to get an audience for my dissertation work. For example, in presenting a paper on responsive architectures for consideration in a CAA panel organized by art historians, my participation was rejected on the basis of not being an art historian, architect, or architecture scholar. A paper I was invited to submit for a special issue of a well-known cultural studies journal (in June 2017) was later rejected (in November 2017), egregiously mischaracterized as “too oriented toward cognitive science and evidence-based science” and not adhering to the methods and theories of cultural studies (as vague and heterodox as these are methods and theories avowedly are). A proposed

essay for a special issue on the work of Catherine Malabou was very graciously rejected on the basis of being better suited for an arts-architectural studies venue than a philosophical journal. My application for an environmental arts residency was rejected, again very kindly, as not being specific enough to the chosen topic, in effect, a nonspecific or moving target. The message I have walked away with from these experiences is that even divergent fields like art history (which tends to be highly specialized) and cultural studies (a field that developed in response to the insularity of other disciplines and has always maintained a somewhat inchoate epistemological core) can be protective of essentialist theories and methods and openly hostile to and threatened by extradisciplinary or intradisciplinary readings.

It's not necessarily that disciplines are closed, per se, it's that people can be closed-minded and there's never been a system in place that investigates transdisciplinary, intradisciplinary, extradisciplinary heuristics or ways of improving internal communication within disciplinary communities, let alone across disciplines or with broader social venues or even within ourselves. Transdisciplinarity has never been easy to accomplish for this reason. Yet, as educator John W. Gardner writes in *Self-Renewal: The Individual and the Innovative Society* (1963): "Failure to face the realities of change brings heavy penalties. . . . Individuals become imprisoned in their own rigidities. Great institutions deteriorate. Civilizations fall. Yet decay is not inevitable. There is also renewal."⁶¹

In an essay published in the early 2000s, Alison Hearn expands the 1990s notion of interdisciplinarity providing a platform for difference into a more communal, architectonic platform for becoming that is more in line with the ecological thinking of transversal transdisciplinarity:

From its earliest incarnations, the unique social space of the university has always attempted to enact a very simple idea: we should learn and think together. At its core is a notion of community and of communication that is generated both inside and, necessarily, beyond the walls of the place. Real learning built out of dialogue is necessarily open-ended, exploratory, and self-referential. The university community is, as a result, always in the process of 'becoming,' constituting itself every time it tries to define itself, again within and against its social context. Every time we ask what a university is, we are making a claim about its future, namely, that it is not complete.⁶²

More than ten years ago, via a media ecologies approach, Jussi Parikka set out a concrete future course for media studies: “The best way for media studies to really make sense is to think outside media—of where it expands, takes us, if we persistently follow its lead.”⁶³ Parikka calls for media studies to become more “transversal,” following Guattari—meaning it must “develop itself into *a study of relations*, of mediations in that much wider sense.”⁶⁴ Andrew Goffey also explores transversality through Guattari’s work on institutionalization as the “problem of the production of institutions,” in which he asks, “who produces the institution and articulates its subgroups? Is there a way to modify this production?”⁶⁵ Thinking in terms of groups and their practices allows for becoming more sensitive to relations and their mediations.

Becoming-Inquiry

Elizabeth Adams St. Pierre, a University of Georgia professor whose two decades of research in subjectivity and development of the new approach “post qualitative inquiry” or “post inquiry” extensively involves her own active processual, minoritarian, deterritorializing experiences as a graduate student, researcher, and university professor, has provided some guidance for my own writing and research process, including the conceptual and practical work that went into this dissertation. In discussing her intervention into research methodologies, St. Pierre describes a problem she encountered during her own doctoral research resulting from the “incompatibility” of trying to apply what was available at the time in terms of qualitative research methods—an invention in the 1970s and 1980s as a critique of positivist social science—to a doctoral dissertation in subjectivity (using the theoretical teachings of Deleuze, Foucault, Derrida) in the US academy in the early 1990s. In the methods chapter of her dissertation, she wrote: “I believe the persistent critique urged by poststructuralism enables a transition from traditional methodology to something different and am not too concerned at this time with naming what might be produced.”⁶⁶ Her takeaway from this experience is that “method always comes too late and is always out of date. Method will constrain you.”⁶⁷

In her critical work since the early 2000s, St. Pierre argues that the opening created by a flood of postmodern, poststructural Continental theory that entered and agitated the North American academy in the 1980s, in particular with Deleuze and Guattari’s work, “have given us

lots of new concepts that are not embedded in humanist epistemologies and ontologies.”⁶⁸ Not only this, but these concepts provide researchers with ways to do inquiry “without falling back into some pre-existing methodology that mostly ignores epistemology and ontology.”⁶⁹ A research problem may become a site of inquiry and line of flight, adopt the transversal theoretical and experimental concept, draw upon the philosophical project of thinking with concepts, make sense with Deleuze and Guattari’s concept of becoming and thinking through affects and percepts, such as in St. Pierre’s post inquiry. One of the most compelling aspects of her argument is that educational researchers need to be “untrained” (2016) in terms of their habit to do methodology, a transversal criticism that aims to bring awareness to, and subvert, the unconscious that undergirds institutional psychic lives.

In her academic work, St. Pierre investigates the methods of Foucault, Deleuze, and Guattari’s work (e.g., archaeology, genealogy, power/knowledge reading, haecceity, rhizoanalysis), and in particular, the molecular dimension of this work—what Guattari referred to as “the dimension of interrogation of the relationship between subjectivity and all kinds of things, the body, time, work, problems of daily life, all the becomings of subjectivity.”⁷⁰ She approaches their work as “a provocation for thinking ontology differently”⁷¹ and encourages her doctoral students to not take methods for granted, but to actively search for them. I was fortunate to have had similar tutelage from my research methods instructors at York—it was a student-led class, supervised by Stuart Murray and Paul Moore, in which I was rewarded for submitting a paper exploring schizoanalysis—the transversal approach used by Guattari in his antipsychiatry experiments at La Borde—as a qualitative research methodology with my first publication as a PhD student.⁷² I argued in my paper that despite its apparent breadth, the current framework for empirical methodology is inadequate and needs to be thoroughly reinvented—not only in the direction of militant research or research-creation but also in the direction of refusal. To that effect, St. Pierre argues “we must leave humanist methodology behind. We invented it, we made it up, and we can now try to forget it, because how can we do new empiricist work in humanist study?”⁷³

In this dissertation, I continue this argument, seeking guidance in and speaking to St. Pierre’s ongoing elaboration of post qualitative inquiry in lieu of research methods and in transversal or “transgressive” transdisciplinarity, particularly of the kind introduced by Guattari’s

“The Ethico-Political Foundations of Interdisciplinarity” (1991) and subsequent ethico-political paradigms for research distributed among multiple human and machine intelligences.

Post qualitative inquiry

In the early 2000s, St. Pierre introduced the new field of “post qualitative inquiry,” which is not methods-driven but informed by concepts like Karen Barad’s entanglement, Gilles Deleuze and Felix Guattari’s assemblage, and by the “ontological turn” of practices those concepts make possible, practices that will be different in different projects. Reflecting upon her personal experience with “conventional humanist qualitative methodology,” St. Pierre writes that since the mid-1990s—during her dissertation writing, when she first conceptualized post qualitative inquiry—it has become “abundantly clear . . . that methodology should never be separated from epistemology and ontology (as if it can be) lest it become mechanized and instrumental and reduced to methods, process, and technique.”⁷⁴

Post qualitative inquiry is a refusal methodology. It is an invitation to think and do educational inquiry outside normalized structures of humanist epistemology, ontology, and methodology. It draws upon Foucault’s understanding of inquiry as “curiosity” rather than knowledge production. Post inquiry emphasizes autonomy and self-reliance. In a 2015 interview, St. Pierre said that in preparing her students for research projects, she advises them to “read, read, read and then ‘do’ the next thing that makes sense and to keep doing the next things and then all that doing *is a methodology*—that is, if they still must cling to a methodology.”⁷⁵ Her advice, and technique, is to put epistemology and ontology first, and then to figure out an appropriate mode of inquiry. St. Pierre writes, post qualitative inquiry “*is immanent. . . . It never exists, it never is. It must be invented, created differently each time, and one study called post qualitative will not look like another.*”⁷⁶

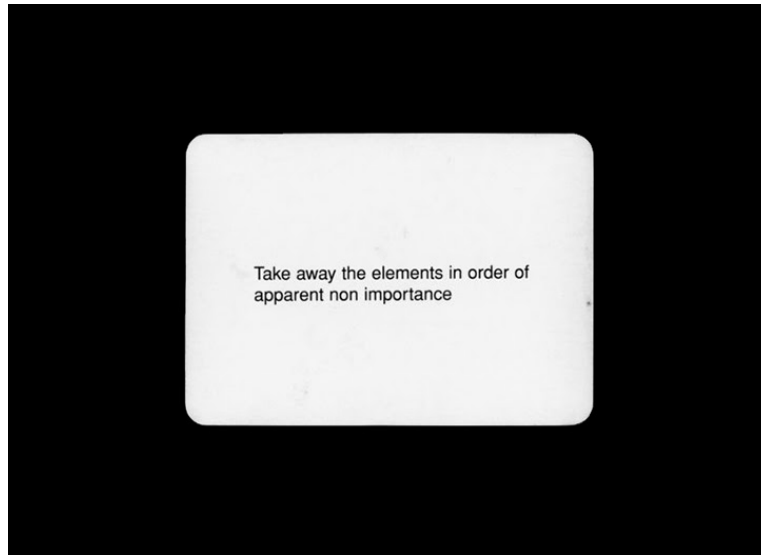


Figure 3.1. From *Oblique Strategies: Over one hundred worthwhile dilemmas*, part of a corpus of thought experiments designed as a deck of cards by Brian Eno and Peter Schmidt (1975).

I discovered St. Pierre’s empirical inquiry when I was in the editing phase of my dissertation—a long, processual rediscovery phase that began just before COVID-19 required I abandon my (retrospectively overreaching, perhaps for a postdoc) neuroscientific research at McGill University’s Osler Library in March 2020. I felt a tremendous amount of affinity with her lengthy, laborious, librarian-esque style that simultaneously traverses a “sea of reading,” creating a “field of reading,” and writing intensely as I was embodying it at that moment in Montreal, in an ocean of research-creation spanning the Osler Library, the McGill University Archives (MUA), and the Canadian Centre for Architecture (CCA) archives.

I was also drawn to her understanding of the aggressive push to positivize qualitative research in the early twenty-first century, how increasingly, “interpretive qualitative methodology, whose methods are emergent, became methods-driven, linear, and systematic, following a predetermined ‘research process’ using predetermined ‘research designs’ like case studies and focus-group research.”⁷⁷ Part of the push to provide legible methodological routes for information is to validate or invalidate research, to reward it with funding or to deem it irrelevant to or at odds with preexisting structures. It can determine and undermine the work in multiple directions by forcing it to appear in existing structures of intelligibility.

For decades, St. Pierre has expressed concern with the “rush to application” of new posthuman, post-ontological methodologies, echoing Maggie MacLure’s observation of language and materiality in post-qualitative methodology, “the shock of the altered states of language in a materialist ontology has not been fully felt” (2013),⁷⁸ with her own “the shock of the altered states of human being after the ontological turn has also not been fully felt.”⁷⁹ St. Pierre reminds us that “rush to application” will always come too late, because “[w]e lack creation. *We lack resistance to the present.*”⁸⁰ In his work translating and theorizing Guattari’s long-term projects investigating transversality and transdisciplinarity, Gary Genosko tells us this was partly due to Guattari’s early experiments in militant, anti-institutional, horizontal, and transversal political organizing, “Guattari learned early that there were always other ways of doing things, complexifying componential heterogeneity, respecting singular (automodeling) and collective (general modeling) assemblages. The same old barriers were thrown up again and again—fear, timidity, boredom, reticence, close-mindedness, laziness—and each time they had to be taken down, more arose in their wake.”⁸¹ Focusing Guattari’s criticism on academic research, St. Pierre maintains that we lack the awareness of habit, focused attention, and courage to set aside the old methodologies of the old empiricisms.

In a recent paper, St. Pierre responds to research-creation practitioner Erin Manning’s conception of methods as an “apparatus of capture”:

In working as an apparatus of capture, method gives reason its place in the sun, it diagnoses, it situates, it organizes, and ultimately it surveys and judges. Methods, we hear, are ever-changing, and this is surely the case. But any ordering agenda that organizes from without is still active in the exclusion of processes too unintelligible within current understandings of knowledge to be recognized, let alone studied or valued. Despite its best intentions, method works as the safeguard against the ineffable: if something cannot be categorized, it cannot be made to account for itself and is cast aside as irrelevant.⁸²

Instead of looking for already existing methods or looking for ways to address all the things positivism does not in my research (too unintelligible; too ineffable)—deconstructing various biases, querying the onto-epistemological assumptions of all findings, using theory in analysis—I followed St. Pierre’s suggestion that we follow our own onto-epistemologies that determine the

research questions we ask and to ask ourselves “more radically, *whether we even believe in method.*”⁸³ As a student, I appreciate her attention to method as a streamlining process, as one of many streamlining processes graduate students are encouraged to adopt to jump through departmental, disciplinary, and professional hoops as quickly as possible in the neoliberal university during the ‘cognitive turn’ of contemporary computational capitalism: “Most of us are limited by time and money. But that doesn’t mean we have to adopt some pre-existing set of research practices.”⁸⁴

In a 2017 article, St. Pierre argues for new empirical inquiry that begins not with method and methodology, but with a concept or concepts.⁸⁵ She observes “writing begins with others’ writings,” in the context of “an already absent collaboration,” but also of the Deleuzoguattarian conceptual work always as more than one:

For me, writing begins with others writing—others’ machines—and I collaborate, not in the conventional sense with a living, present co-author who stands guard over the text, but with writers absent, writers across the world or long dead, strangers I know intimately, lovers whose words I cherish and repeat repeatedly, cite and overcite for fear their words will be sacrificed to the paraphrase police. Here, I borrow from the ancient Greeks who recognized the ‘value of the already-said,’ the fragmentary logos transmitted through teaching, listening, or reading.⁸⁶

Here, St. Pierre is bringing with her Foucault, a section of the essay “Self-Writing” (1983) in *Ethics: Subjectivity and Truth*, which talks about the ancient Greek practice of *hupomnēmata*, the practice of keeping a notebook not for confessional or private thoughts, nor “to pursue the unspeakable, nor to reveal the hidden, nor to say the unsaid, but on the contrary to capture the already said, to collect what one has managed to hear and read, and for a purpose that is nothing less than the shaping of the self.”⁸⁷ So, in the spirit of the schizoanalytic group dynamic, of transversality, of the *hupomnēmata* (much of this dissertation was composed across series of notebooks), I invite and bring St. Pierre, Deleuze and Guattari, Foucault, and others along with me in this methods chapter, where so far, I have offered some concepts useful for this anti-method transdisciplinary dissertation probing communication and culture, and hopefully for maintaining the openness of thought in an increasingly reactive environment in which all forms of intelligence and learning also take place.

Inquiry as Bricolage

The idea that researchers can maintain distance from their inquiry no longer holds sway in qualitative research: “observation not only *disturbs* and *shapes*, but is *shaped* by what is observed.”⁸⁸ In a very real sense, the researcher and the inquiry co-modulate each other, and not only that, the field of qualitative research is “defined by a series of tensions, contradictions, and hesitations”⁸⁹ and the researcher is “always already enmeshed within complex transversal social-material spaces where we must act as *bricoleurs* using whatever effects we believe are possible and desirable.”⁹⁰ As researchers, “we are all handymen [bricoleurs]: each with our [sic] little machines,” always connecting and reconnecting “conceptual bits”⁹¹ in different series, in different milieux, and plateaus to address different problems based on events and encounters in the world.

This recalls the anthropological definition of bricoleur. In *The Savage Mind* (1962), Claude Lévi-Strauss uses the term “bricolage” to describe the naïve form of production or artistic creativity that defines ‘primitivist’ or ‘prior’ forms of knowledge production (whether mythical/magical, artistic, or scientific). Lévi-Strauss compares the working of the bricoleur and the engineer. The bricoleur creates or produces through *bricolage*: a contingent means or method of producing that relies on using whatever methods and materials at hand, without plan or design, creating new ways of doing things and repurposing tools. Bricolage involves the following processes:

Improvisation: when things need to get done, the processes for doing them are motivated by experimentation;

Recombination: working with whatever is at hand; appropriating “the remains and debris of events” and “continual reconstruction from the same materials”⁹²;

Self-organization: regulation and transformation are self-instituted and self-managed;

Feedback: experimental ideas are played out in self-correcting structures.

In contrast, with the engineer everything is purpose-built, vetted, tested, organized, and planned in advance. It is a model that does not hold up in everyday life. In the cultural milieu, bricolage—composed here by remixing Dick Hebdige with Deleuze and Guattari—refers to tinkering of the bricoleur, the amateur handyperson, or curious hacker and the art of making do with whatever’s at

hand for the problem or project at hand.⁹³ Guattari, in his working, living methods—and in writing on *why transdisciplinarity must also be transversal*—discusses this dynamic of bricolage in terms of feedback: “in the course of authentic research one is always caught up in a constructivist process. The object of research has a feedback relation with the latter. In these conditions, social experimentation and action-research ought to be imbricated much more frequently with the objective analysis of social facts. In fact, in many domains, the research process is called on permanently to modify, to reconstruct, its object.”⁹⁴ A living transdisciplinarity, Guattari explains, is a sort of plasticity, at least at the level of representation in the intentional field.⁹⁵

Conclusion: Plastic Methods for Plastic Publics

We can become prisoners of our own scholarly apparatuses and methods, and the construction of a magnificent reception facility for a fundamentally undisciplinable (genuinely transdisciplinary) thought operates with the violence of inscription and will to conformity that must be resisted. —Gary Genosko⁹⁶

What Jantsch referred to fifty years ago as the university’s lackluster approach to breaking the cycle of disciplinary rigidity, status, and ascension (appointments, tenure, awards, etc.) within the university ecosystem still exists, in seemingly far more punishing ways.⁹⁷ Working within disciplinary regimes which are often tied to funding regimes and survival, we may reproduce distinctions that exacerbate our ability to transverse complex social theories and processes, to access hot-topic research and/or funding streams in STS, digital humanities and the “posthumanities.”⁹⁸ Disciplines still *discipline* academics to stay within rigid lanes, working with preset theories and methodologies, and to borrow a term from environmental studies, in our current state of disaster and devastation—which is intra-active—the crux of the issue is no longer about sustainability (as with Rosi Braidotti), but about “managed depletion.”⁹⁹

To transverse disciplinary boundaries involves recognizing “the actual transdisciplinary constitution of disciplinary content.”¹⁰⁰ It’s not necessarily that disciplines are closed, per se, it’s that people can be closed-minded and there’s never been a system in place that investigates disciplinary and extradisciplinary heuristics or ways of improving internal communication within disciplinary communities, let alone across disciplines or with broader social venues. Following Guattari, we have to establish a bridge that consists, in part, of shedding our mechanist visions of

the machine and promote a conception which encompasses all of its aspects: technological, biological, informatics, social, theoretical and aesthetic.¹⁰¹ Transdisciplinarity has never been easy to accomplish for this reason.

In January 2019, *Wired UK* boldly announced that this would be the year “cultural divides between science and art will cease to exist. . . . We understand now that the arts and sciences are the subjective and objective poles of the same great human enterprise, that there is only one world out there and we have to view it with an ever-curious and ever broadening mind.”¹⁰² One year earlier, in what remains the most recent *SAGE Handbook of Qualitative Research*, the editors wrote: “A new paradigm is on the horizon, one that doubles back on itself and wanders in spaces that have not yet been named. It celebrates the implications for qualitative methodology of the recent (re)turn to materiality across the social sciences and humanities. The ‘new materialisms’ promise to go beyond the old antagonisms of nature and culture, science and the social, discourse and matter.”¹⁰³ Now, in 2023, the “post-pandemic” era in which this dissertation is materializing—of misinformation campaigns and conspiracy theories combined with recurring lockdowns in which people are forced to remain remote and distant from other people to mitigate infection—publics have largely moved online (which for many people involves and channels a deep sense of their own powerlessness, disconnection, uncertainty), algorithms channel information to modulate connections, and social media has lent shape to a multi-domain singularity linked by the divisiveness embodied in their lack of social power, wealth inequalities, and post-truth uncertainties.

This dissertation engages and expands the Foucault-Deleuze diagram of power or “the control diagram,” offering an open-ended theory of plasticity and a plastic inquiry into how new forms of capitalism, such as neurocapitalism, engage in global information warfare, targeting microprocesses within individual and collective brains to overwhelm subjects’ alignment with social reality, truth, belief, public trust, and knowledge of self. My argument for methods is that by developing practices of radical observation (such as the oblique function, and insistence on looking at the same thing from multiple viewpoints), radical “openness” as proposed by Kerasovitis, and humility—as advocated by Guattari, St. Pierre, et al.—we can overcome the metanarrative of division as coherent unity. As an element of this dissertation’s “research-

creation,” a brief excursus for the reader vis-à-vis a somatic exercise immediately follows this chapter.

Notes

¹ See, for example: Kim Sawchuk and Owen Chapman, “Research-Creation: Intervention, Analysis and ‘Family Resemblances,’” *Canadian Journal of Communication* 37 (2012): 5–26; SSHRC’s current guidelines for research-creation, https://www.sshrc-crsh.gc.ca/funding-financement/apply-demande/background-reseignements/preparing_research_creation_application_idg-preparer_1_application_recherche-creation_sds-eng.aspx.

² See David Graeber, Stephen Shukaitis, and Erika Biddle (eds.), *Constituent Imagination: Militant Investigations // Collective Theorization* (Oakland, Edinburgh, West Virginia: AK Press, 2007); Mary N. Taylor and Noah Brehmer (eds.), *Commonist Horizon* (Brooklyn and Philadelphia: Common Notions, 2022).

³ Alessandra Renzi, *From Collectives to Connectives: Italian Media Activism and the Repurposing of the Social*, PhD diss., Sociology and Equity Studies, Ontario Institute for Studies in Education, University of Toronto, Toronto (2011), 20.

⁴ Tero Karppi, *Disconnect.Me: User Engagement and Facebook*, PhD diss., Department of Media Studies, University of Turku, Turku (2014), 41.

⁵ Franco Berardi, *And. Phenomenology of the End. Cognition and Sensibility in the Transition from Conjunctive to Connective Model of Social Communication*, PhD diss., School of Art, Design and Architecture, Aalto University, Helsinki (2014), 17.

⁶ Isabelle Stengers, “Introductory Notes on an Ecology of Practices,” *Cultural Studies Review* 11, no. 1 (January 2005): 186.

⁷ See Gary Genosko, “Félix Guattari: Towards a Transdisciplinary Metamethodology,” *Angelaki: Journal of the Theoretical Humanities* 8, no. 1 (April 2003): 129.

⁸ Jonathan Beller, *The Message is Murder: Substrates of Computational Capital* (London: Pluto Press, 2018).

⁹ On the principally social aspect of methodology, see: Deborah Britzman, “Structures of feeling in curriculum and teaching,” *Theory into Practice* 31 (3): 252–258, in particular, 254: “Understanding methodology as a social rather than a technical question requires a second look at the kind of selves cultivated by both schools and universities. The desire for a ‘literal’ practicality in educational coursework is not so much a dismissal of theory as it is an ushering in of stability and control and thus for a particular notion of the stable self.”

¹⁰ Konstantinos Kerasovitis, “Post Qualitative Research—Reality through the Antihierarchical Assemblage of non-Calculation,” *The Qualitative Report* 25, no. 13 (2020): 56–70.

¹¹ Kerasovitis describes the post qualitative research process as having “no clear structure, no designated route, no prefixed chapter names in which research is to be organised, no fixed goal or hypothesis to prove, and yet one arrives at new knowledge, through a traceable path, communicated in a very clearly structured text.” See Kerasovitis, “Post Qualitative Research.”

¹² Kerasovitis, “Post Qualitative Research.”

¹³ Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham and London: Duke University Press, 2007), 381 and 409.

¹⁴ See Carin Kuoni (comp.), *Joseph Beuys in America: Energy Plan for the Western Man* (New York: Basic Books, 1993).

¹⁵ Pamela Kort, “Beuys: The Profile of a Successor,” 2001, qtd. in David Levi Strauss, “In Case Something Different Happens in the Future: Joseph Beuys and 9/11,” *The Brooklyn Rail*, September 5, 2011, <http://brooklynrail.org/2011/09/art/in-case-something-different-happens-in-the-futurejoseph-beuys-and-911>.

¹⁶ Audrey Watters, “Hope for the Future,” Keynote at Digifest 2022, March 8, 2022, <http://hackeducation.com/2022/03/08/hope>.

¹⁷ Isabelle Stengers, “Wondering about Materialism,” *The Speculative Turn: Continental Materialism and Realism*, ed. Levi Bryant, Nick Srnicek, and Graham Harman (Melbourne: re.press, 2010), 373.

¹⁸ Laszlo Ervin, *The Interconnected Universe: The Conceptual Foundations of Transdisciplinary Unified Theory* (Singapore, New Jersey, London, Hong Kong: World Scientific, 1995), 134.

¹⁹ Peter Osborne, “Problematizing Disciplinarity, Transdisciplinary Problematics,” Special Issue: Transdisciplinary Problematics, *Theory, Culture & Society* 32, no. 5–6 (2015): 2.

²⁰ For example, “critical ethnography as street performance,” subalternity, qualitative case studies, “arts-based” inquiry, “grounded theory,” to name a few examples of grounded research. As for the horizon of performance-research, in their introduction to the fifth edition, editors Denzin and Lincoln imagine something like a post-ontological age of becoming for qualitative research methodologies. Elsewhere, this is described as “post qualitative research methods.”

²¹ Erin Manning, *The Minor Gesture* (Durham, NC: Duke University Press, 2016), 31.

²² Ian James Kidd, “What’s So Great about Feyerabend? Against Method, Forty Years On,” *Metascience* 24, no. 3 (2015): 343–349.

²³ Paul Feyerabend, *Against Method: Outline of an Anarchistic Theory of Knowledge* (London and New York: Verso, 1993), vii and x.

²⁴ Norman K. Denzin and Yvonna S. Lincoln (eds.), “Introduction: The Discipline and Practice of Qualitative Research,” in *The SAGE Handbook of Qualitative Research* (Thousand Oaks, London, New Delhi, Singapore: SAGE, 2005), 29.

²⁵ A very small sampling of recent compilations on the various lineages for transdisciplinarity: *Theory, Culture & Society* special issue on “Transdisciplinary problematics” (2015); *Futures* 65 “Advances in Transdisciplinarity 2004–2014” (2015); *The International Handbook on Social Innovation: Collective Action, Social Learning and Transdisciplinary Research*, ed. Frank Mouleart et al. (Cheltenham, UK & Northampton, MA: Edward Elgar Ltd., 2013); *International Journal of Qualitative Studies in Education*, Matthias Bergmann et al, *Methods for Transdisciplinary Research: A Primer for Practice* (Frankfurt and New York: Campus Verlag GmbH, 2012); James Chandler and Arnold I. Davidson (eds.), “The Fate of Disciplines,” *Critical Inquiry* 35, no. 4 (Summer 2009).

²⁶ Soskolne (2000), qtd. in Bernard C.K. Choi and Anita W.P. Pak, “Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness,” *Clinical and Investigative Medicine* 29, no. 6 (2006): 351–364.

²⁷ Gary Genosko, *Félix Guattari: An Aberrant Introduction* (London and New York: Continuum, 2002), 24.

²⁸ See Félix Guattari, *The Three Ecologies*, trans. Ian Pindar and Paul Sutton (London and New Brunswick, NJ: The Athlone Press, 2000); Félix Guattari, *Psychoanalysis and Transversality: Texts and Interviews 1955–1971*, trans. Ames Hodges (South Pasadena: Semiotext(e), 2015); Félix Guattari, “Entering the Post-Media Era,” in *Soft Subversions: Texts and Interviews 1977–1985* (Los Angeles: Semiotext(e), 2009/1996), 301–306; Genosko, *Félix Guattari: An Aberrant Introduction*, 25–26.

²⁹ See Rick Dolphijn and Iris van der Tuin, *New Materialism: Interviews & Cartographies* (Open Humanities Press, 2012), <https://library.oapen.org/handle/20.500.12657/33904>:

As a new materialist concept, transversality is non-categorical and non-judgemental. It defies disciplinary categories and resists hierarchies. A transversal line cuts diagonally through previously separated parallel lines, as in the common garden gate. Each of those horizontal planks in the gate could be an academic discipline, or a previously conceptualised categorical segregation. The diagonal or transversal line cuts through these. So you can see why it might be useful in contexts of the thinking of gender, race, class, disability, religion, or any other framework we might choose. In new materialism, transversality is mostly used in this sense of cutting through disciplinary boundaries. It cuts across both text and matter; in terms of new materialism it undoes the said polarity, granting access to (or: intra-acting between) both constructivist-culturalist specificity and realist-ontological indifference of the inert (rather than the universal). Because originally transversality reflected a group dynamic rather than a dual one, it conceptually diversifies the disciplinary dualistic constraints imposed by dualisms such as social-biological. Consequently transversality is hailed as a central tool in eluding dualism, and in essence substituting it. Transversality involves processes of becoming rather than being simply a new method (of, say, overcoming dualisms).

³⁰ J.H. Bernstein, “Transdisciplinarity: A review of its origins, development, and current issues,” *Journal of Research Practice* 11, no. 1 (2015), <http://jrp.icaap.org/index.php/jrp/article/view/510/412>.

³¹ Maria Montessori, *The Discovery of the Child*, trans. M. Joseph Costelloe (New York: Ballantine Books, 1967), 5.

³² Jean-Claude Bringuier, *Conversations with Jean Piaget*, trans. Basia Miller Gulati (Chicago: The University of Chicago Press, 1980), 132.

³³ See Bernstein, “Transdisciplinarity: A review” (2015) for an alternate list.

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- ³⁴ See Gregory Bateson, *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology* (Northvale, NJ and London: Jason Aronson Inc., 1987/1972).
- ³⁵ Erich Jantsch, “Integrative Planning for the ‘Joint Systems’ of Society and Technology—The Emerging Role of the University,” a report produced for the U.S. Department of Health, Education & Welfare, Office of Education, Cambridge, Massachusetts, May 1969: 75–79. See also: Julie Thompson Klein, “Discourses of Transdisciplinarity: Looking Back to the Future,” *Futures* 63 (2014): 70; Milton Friesen, “Glorious Adaptation: Institutions that are Future Ready,” August 24, 2012, <https://convivium.ca/articles/glorious-adaptation-institutions-that-are-future-ready>.
- ³⁶ Erich Jantsch, “Perspectives of Planning,” Proceedings of the OECD Working Symposium on Long-Range Forecasting and Planning, Bellagio, Italy, October 27–November 2, 1968, 472.
- ³⁷ Jantsch, “Integrative Planning for the ‘Joint Systems’ of Society and Technology,” 1. Here, at the outset of his study, Jantsch references John W. Gardner’s iconic 1963 book *Self-Renewal: The Individual and the Innovative Society*, which discussed the importance of a “growth mindset” more than fifty years before psychologist Carol Dweck coined the term.
- ³⁸ Jantsch, “Integrative Planning for the ‘Joint Systems’ of Society and Technology,” 65.
- ³⁹ See Erich Jantsch, “Intra- and Transdisciplinary University: A Systems Approach to Education and Innovation,” *Policy Sciences* 1, no. 4 (Winter 1970): 410–411.
- ⁴⁰ Jantsch, “Integrative Planning for the ‘Joint Systems’ of Society and Technology,” 65–67.
- ⁴¹ Alison Hearn defines “extra-disciplinarity,” for the most part, as learning and research occurs outside of the classroom and across disciplinary structures of the university. See Alison Hearn, “Interdisciplinarity / Extradisciplinarity: On the University and the Active Pursuit of Community,” *History of Intellectual Culture* 3, no. 1 (2003): 12.
- ⁴² Jantsch, “Integrative Planning for the ‘Joint Systems’ of Society and Technology,” 68.
- ⁴³ Jantsch, “Integrative Planning for the ‘Joint Systems’ of Society and Technology,” 6–7.
- ⁴⁴ It is worth noting that Jantsch, the university system’s “original transdisciplinarian,” was unable to get tenure, or even a long-term paid academic position while (and after) he developed his theories on how to prepare the university and its constituents for a complex systems-based future.
- ⁴⁵ See, for example, Osborne, “Problematizing Disciplinarity, Transdisciplinary Problematics,” 3.
- ⁴⁶ Klein, “Discourses of Transdisciplinarity,” 72.
- ⁴⁷ Félix Guattari, “Transdisciplinarity Must Become Transversality,” trans. Andrew Goffey, Special issue “Transdisciplinary Problematics” in *Theory, Culture & Society* 32, nos. 5–6 (2015): 131. Guattari wrote the original in April 1992, with the title *Fondements ethico-politiques de l’interdisciplinarité*.
- ⁴⁸ Cary Wolfe, *What is Posthumanism?* (Minneapolis and London: University of Minnesota Press, 2010), 107.
- ⁴⁹ Sue L.T. McGregor, “The Nicolescuian and Zurich Approaches to Transdisciplinarity,” *Integral Leadership Review* (April–June 2015), <http://integrallleadershipreview.com/13135-616-the-nicolescuian-and-zurich-approaches-to-transdisciplinarity/>.
- ⁵⁰ Michael Gibbons, Camille Limoges, Helga Nowotny, Simon Schwartzman, Peter Scott, and Martin Trow, *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies* (Los Angeles, London, New Delhi, Singapore, and Washington DC: SAGE Publications, 1994), 5.
- ⁵¹ Klein, “Discourses of Transdisciplinarity,” 68.
- ⁵² Wolfe, *What is Posthumanism?*, 127.
- ⁵³ Wolfe, *What is Posthumanism?*, 127.
- ⁵⁴ Osborne, “Problematizing Disciplinarity, Transdisciplinary Problematics,” 12.
- ⁵⁵ Wolfe, *What is Posthumanism?*, 108.
- ⁵⁶ Michael Ryan, “Deconstruction and Radical Teaching,” *Yale French Studies* 63, *The Pedagogical Imperative: Teaching as a Literary Genre* (1982): 49.
- ⁵⁷ Shoshana Felman, “Psychoanalysis and Education: Teaching Terminable and Interminable,” *Yale French Studies* 63, *The Pedagogical Imperative: Teaching as a Literary Genre* (1982): 40.
- ⁵⁸ Stanley Fish, “Being Interdisciplinary Is So Very Hard to Do,” *Issues in Integrative Studies* 9 (1991/1989): 100. [99–112]
- ⁵⁹ Ryan, “Deconstruction and Radical Teaching,” 49.
- ⁶⁰ Fish, “Being Interdisciplinary Is So Very Hard to Do,” 110–111.
- ⁶¹ John William Gardner, *Self-Renewal: The Individual and the Innovative Society* (Brattleboro, VT: Echo Point Books & Media, 1963), xiv.

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- ⁶² Alison Hearn, “Interdisciplinarity/Extradisciplinarity: On the University and the Active Pursuit of Community,” *History of Intellectual Culture* 3, no. 1 (2003), <https://journalhosting.ucalgary.ca/index.php/hic/article/view/68804>.
- ⁶³ Jussi Parikka, “Media Studies—studies of relations, ecology, waste,” *Machinology*, March 11, 2011, <https://jussiparikka.net/2011/03/11/media-studies-studies-of-relations-ecology-waste/>.
- ⁶⁴ Here, Parikka draws upon Felix Guattari’s discussion of transversality in *Three Ecologies* (2000), 43.
- ⁶⁵ Félix Guattari, *Psychoanalysis and Transversality: Texts and Interviews, 1955–1971*, trans. Ames Hodges (Los Angeles: Semiotext(e), 2015), 62.
- ⁶⁶ Elizabeth Adams St. Pierre, *Arts of Existence: The Construction of Subjectivity in Older White Southern Women*, Phd diss., Ohio State University, 1995, 209, http://rave.ohiolink.edu/etdc/view?acc_num=osu1217010855.
- ⁶⁷ Elizabeth Adams St. Pierre, “‘Do the next thing’: An interview with Elizabeth Adams St. Pierre on post-qualitative methodology,” Hanna Guttorm, Riikka Hohti, and Antti Paakkari, *Reconceptualizing Educational Research Methodology* 6, no. 1 (2015): 18.
- ⁶⁸ St. Pierre, “Do the next thing,” 16.
- ⁶⁹ St. Pierre, “Do the next thing,” 16.
- ⁷⁰ Félix Guattari, “Pragmatic/Machinic: A Discussion with Guattari,” conducted, transcribed, and translated by Charles J. Stivale, March 19, 1985, http://topologicalmedialab.net/xinwei/classes/readings/Guattari/Pragmatic-Machinic_chat.html.
- ⁷¹ Elizabeth Adams St. Pierre, “Deleuze and Guattari’s language for new empirical inquiry,” *Educational Philosophy and Theory* 49, no. 11 (2007): 1080.
- ⁷² Immense gratitude to Stuart Murray for making this happen: Erika Biddle, “Meeting a Patient as a Singular Event: A Philosophical Reflection,” *Aporia* 2, no. 3 (2010): 18–26.
- ⁷³ St. Pierre, “Deleuze and Guattari’s language for new empirical inquiry.”
- ⁷⁴ Elizabeth Adams St. Pierre, “A Brief and Personal History of Qualitative Research,” *Journal of Curriculum Theorizing* 30, no. 2 (2014): 3.
- ⁷⁵ St. Pierre, “Do the next thing,” 16.
- ⁷⁶ Elizabeth Adams St. Pierre, “Post Qualitative Inquiry, the Refusal of Method, and the Risk of the New,” *Qualitative Inquiry* 27, no. 1 (2021): 6.
- ⁷⁷ Elizabeth Adams St. Pierre, “Post Qualitative Inquiry,” keynote lecture, Australian Association of Research in Education, New Zealand Association for Research in Education, Brisbane, Australia, December 2, 2014, <https://www.aare.edu.au/assets/documents/Elizabeth-Adams-St.-Pierre-ppt-presentation.pdf>.
- ⁷⁸ Maggie MacLure, “Researching without representation? Language and materiality in post-qualitative methodology,” *International Journal of Qualitative Studies in Education* 26, no. 6 (2013): 658–667, <https://doi.org/10.1080/09518398.2013.788755>.
- ⁷⁹ Elizabeth Adams St. Pierre, “Deleuze and Guattari’s Language for New Empirical Inquiry,” *Educational Philosophy and Theory* 49, no. 11 (2007): 1080–1089.
- ⁸⁰ Gilles Deleuze and Félix Guattari, *What Is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell (New York: Columbia University Press, 1994), 108.
- ⁸¹ Gary Genosko, “Félix Guattari, Towards a Transdisciplinary Metamethodology,” *Angelaki Journal of the Theoretical Humanities* 8, no. 1 (April 2003): 130.
- ⁸² Manning, *The Minor Gesture*, 32.
- ⁸³ St. Pierre, “Post Qualitative Inquiry” (keynote lecture).
- ⁸⁴ St. Pierre, “Do the next thing,” 19.
- ⁸⁵ Elizabeth Adams St. Pierre, “Deleuze and Guattari’s language for new empirical inquiry,” *Educational Philosophy and Theory* 49, no. 11 (2007): 1080–1089.
- ⁸⁶ Elizabeth Adams St. Pierre, “An Always Already Absent Collaboration,” *Cultural Studies ↔ Critical Methodologies* 14, no. 4 (2014): 376–377.
- ⁸⁷ Michel Foucault, “Self-Writing” (1983), in *Ethics: Subjectivity and Truth—The Essential Works of Foucault 1954–1984*, Volume 1 (New York: The New Press, 1997), 210–211.
- ⁸⁸ Yvonna S. Lincoln and Egon G. Guba, *Naturalistic Inquiry* (Newbury Park, London, New Delhi: SAGE Publications, 1985), 98.
- ⁸⁹ Norman K. Denzin and Yvonna S. Lincoln, “Introduction: The Discipline and Practice of Qualitative Research,” in *The SAGE Handbook of Qualitative Research*, Fourth Edition, ed. Norman K. Denzin and Yvonna S. Lincoln (Los Angeles, London, New Delhi, Singapore, and Washington DC: SAGE Publications, 2011), 61.

⁹⁰ George Kamberelis and Greg Dimitriadis, “Focus Groups: Strategic Articulations of Pedagogy, Politics, and Inquiry,” *The SAGE Handbook of Qualitative Research*, Fourth Edition, ed. Norman K. Denzin and Yvonna S. Lincoln (Los Angeles, London, New Delhi, Singapore, and Washington DC: SAGE Publications, 2011), 546. Of note, the two-volume *SAGE Encyclopedia of Qualitative Research Methods* (2008), which at over 1,000 pages is pretty inclusive, does not include transdisciplinarity as a research methodology despite including “Interdisciplinary Research.”

⁹¹ John Rajchman, *The Deleuze Connections* (Cambridge, MA and London: The MIT Press, 2000), 21.

⁹² Claude Lévi-Strauss, *The Savage Mind*, trans. George Weidenfeld and Nicolson Ltd. (London: Weidenfeld and Nicolson, 1966), 13–14.

⁹³ Dick Hebdige, “Subculture: The Meaning of Style” (1979), in *The Subcultures Reader*, ed. Ken Gelder and Sarah Thornton (New York and London: Routledge, 1997), 130–142; Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, trans. Robert Hurley, Mark Seem, Helen R. Lane (Minneapolis and London: University of Minnesota Press, 1983), 1–2.

⁹⁴ Félix Guattari, “Transdisciplinarity Must Become Transversality,” *Theory, Culture & Society* 32, no. 5–6 (2015): 131–137. This translation, by Andrew Goffey, is from a typescript dated April 1992, entitled ‘*Fondements éthico-politiques de l’interdisciplinarité*,’ reprinted with the permission of Emmanuelle Guattari.

⁹⁵ Guattari, *Psychoanalysis and Transversality*, 213.

⁹⁶ Genosko, *Félix Guattari: An Aberrant Introduction*, 29.

⁹⁷ Essentially, not much has changed since Jantsch’s findings in the late 1960s American university. See, for example, Jantsch, “Integrative Planning for the ‘Joint Systems’ of Society and Technology,” 33.

⁹⁸ See Wolfe, *What is Posthumanism?*

⁹⁹ Abraham Lustgarten, “As Colorado River Dries, the U.S. Teeters on the Brink of Larger Water Crisis,” *ProPublica*, August 25, 2022, <https://www.propublica.org/article/colorado-river-water-shortage-jay-famiglietti>.

¹⁰⁰ Irene Dolling and Sabine Hark, “She Who Speaks Shadow Speaks Truth: Transdisciplinarity in Women’s and Gender Studies,” *Signs* 25, no. 4 (Summer 2000): 1196 [1195–1198].

¹⁰¹ Félix Guattari, *Chaosmosis: An Ethico-Aesthetic Paradigm*, trans. Paul Bains and Julian Pefanis (Bloomington and Indianapolis: Indiana University Press, 1995), 107.

¹⁰² Russell Foster, “In 2019, cultural divides between science and art will cease to exist,” *Wired*, January 13, 2019, <https://www.wired.co.uk/article/art-science-cultural-divide>.

¹⁰³ Denzin and Lincoln, *The SAGE Handbook of Qualitative Research* [2018], 39.

CAESURA: LEARNING MACHINES AND ROOM FOR LEARNING

Q: Are you trying to tell the audience something beyond what they hear?

A (Lucier): Yes, I'm trying to make them . . . it's just an extension of what you do when you're a little child at the beach and you put a shell up to your ear and hear the ocean. Then you stop. You don't do that as you grow older. Your ear stops doing that because you've got to think about other things, how to make a living and how to speak to people, how to communicate verbally. I guess I'm trying to help people hold shells up to their ears and listen to the ocean again.¹

The ultimate hidden truth of the world is that it is something we make and could just as easily make differently. —David Graeber, *The Utopia of Rules* (2015)²

This caesura—a pause or interruption to the reading of this text as a dissertation—asks the reader to participate in a short somatic exercise to awaken and activate deep registers of environmental awareness, engagement, and in particular, what Resmaa Menakem has identified as “discernment.” In laying out his program of somatic abolitionism, Menakem discusses at length the racialized differences of how one experiences, *discerns between* or confuses or conflates, for example, sensations of comfort and safety. He argues for somatic antiracism praxis because we live in a time in which we are deeply vulnerable to infection by parasitic media discourses that “wash over us” in waves, “attack after attack,” with “Orwellian . . . high-emotion media.”³ If modern perception management aimed to blur fact and fiction, in contemporary media, algorithms plunge directly into embodied traumas—the human set of problems that algorithms more often reinforce than they resolve—that fester and mutate our behaviors, changing the rhythms of our lives. Rhythmic undulations are driven by algorithms, steering interactions between platforms-consciousness-semiotic and capitalist streams online—the constant traffic of *if-you-like-that-you'll-love-this*—amplifying our powerlessness to discern or to self-govern ourselves and our relationships in contemporary everyday life.

Contemporary public life is permanently engaging and distracting, attention is stretched in many conflicting directions, even when we are locked into the hyperlocal rhythms of our individual homes in a global pandemic. The information that connects us in communicative networks is always working us over, learning and amalgamating our habits and behaviors. New forms of power have required us to relinquish some simple reflex learning to machines, and this constant destabilization of perception contributes to the maintenance, management, and control of algorithmic power.

The Acoustic World

In 1970, McLuhan discussed the cybernetic-generated “changeover”—a change from one system to another—from the “visual world” prominent from the sixteenth to the nineteenth centuries, to an “acoustic world,” which he further described as “in effect, a world of simultaneous information” and likened it phenomenologically to Alice going through the looking glass into Wonderland. McLuhan described cybernation as having more in common with the acoustic world the new forms of media “have enhanced and externalized our entire central nervous systems.” This internalization of capital’s rhythms “works over and molds the entire sensorium”—in the shape of a television screen in McLuhan’s time, perhaps a smartphone or augmented reality in ours—thus transforming all aspects of our social and psychic existence into “a total and simultaneous field of relations alien to the visual world.” The ear, unlike the eye, cannot be focused and is synesthetic:

In the electric world, the simultaneity of information is acoustic because it comes from all directions at once. We hear from all directions at once, and so we are living in an acoustic world. It doesn’t matter whether we’re listening or not, the fact is we’re getting this acoustic pattern.⁴

By the mid-twentieth century, McLuhan realized that our technological tools in turn shape us in ways we did not anticipate. Nor could we, given the limitations of habits of thinking, sensing, and living presented by constant technological change. Around the same time, in *Noise: The Political Economy of Music* (1977), French economist Jacques Attali admonishes how for centuries, Western knowledge has failed to apprehend the world as it is: “It is for hearing. It is not legible, but audible.”⁵ Attali proposes that to understand social relations, their mutations and unities, one

must be deeply attuned to society's noise: "Change is inscribed in noise faster than it transforms society"; "[t]he noises of a society are in advance of its images and material conflicts."⁶ This is why, according to Henri Lefebvre—whose collective works theorize the social production of space and the social reproduction of everyday life—"the history of time and the time of history should include a history of rhythms, which is missing."⁷



Figure C1. From Mark McCloud's series of *Alice in Wonderland*-inspired blotters containing hundreds of doses of LSD.

In *The Production of Space* (1964), Henri Lefebvre declared that historical time would be rediscovered "in and through [reappropriated] space." However, in *Rhythmanalysis* (1983), Lefebvre shifts his attention to the liberatory potential of time,⁸ challenging Henri Bergson's notion of *durée* [duration] with what he calls a "theory of moments" and an analysis of the everyday and its rhythms, or *rhythmanalysis*. Lefebvre writes that in capitalism, "there is nothing left of the visible, the sensible."⁹ Experiential presence has become "an adulterated product that simulates presence."¹⁰ Rhythmanalysis is meant to be a corrective to this; to restore sense of the deeper rhythms that govern time. Rhythms are understood by Lefebvre as forces connecting space, time, and energies: "all rhythms imply the relation of a time to a space, a localized time, or, if one

prefers, a temporalized space.”¹¹ We *contain* ourselves by concealing the diversity of our rhythms: “to ourselves, body and flesh, we are almost objects.”¹²

Lefebvre’s rhythm analyst is foremost concerned with temporalities and their relations within wholes. The ‘whole’ is conceived spatially by Lefebvre, as a noisy theater of the everyday containing: (1) the socioeconomic organization of production, consumption, circulation and the machine-apparatuses of capital; (2) the social time of everyday life; and (3) the internal rhythms of the body.¹³ Rhythms are cyclical undulations that structure time and experience, yet as Lefebvre cautions, *we are only conscious of most of our rhythms when there’s a problem*: “In order to grasp and analyse rhythms, it is necessary to get outside them, but not completely: be it through an illness or a technique. A certain exteriority enables the analytic intellect to function. However, to grasp a rhythm it is necessary to have been **grasped** by it; one must *let oneself go*, give oneself over, abandon oneself to its duration.”¹⁴ *The rhythm analyst must simultaneously occupy both an inside and outside; be immersed and enfeebled with a trauma, illness, or “technique” and yet retain a critical difference.* Let the attentional difficulty of that task sink in.



Figure C2. The ammonite; rhythm within wholes.

Alvin Lucier: Listening to the Ocean

When a person pauses to pick up a shell on the beach and holds it to her ear, she is not only listening for the sound of distant waves but connecting through the shell to the rhythms within herself, disconnecting from that inner world to engage what she hears in the shell, to modulate and become

a module or node to whatever else she might hear or experience environmentally. She puts the shell to her ear, slightly slimy, wet, grains of sand cling to it. Something like silence is contained in the shell, a roaring ocean of silence. The shell is removed, and all her senses are heightened. Water and sand move through the shell in her hand. Waves roll and hiss, amplified by the wind, birds flutter and chirp on the shore around tiny bubbling holes in the sand created by many microscopic creatures. She's the sole human on the beach, but as she listens she becomes attentive to inhabiting a microscopic part of a whole much larger than herself, with many complex relationships beyond the shell and her hand and her ear composing flows of energies and erasing human agency into the environment as the waves disappear into the ocean—which is how American electroacoustic composer Alvin Lucier's "I Am Sitting in a Room" is often described, the specific result being "an erasure of the human performer and the dominance of an environmental music" and a relational shift from linear time to cyclical time.¹⁵

Sound is for Merging With

The constant activity of capitalism, its "rhythms, speeds, and formats of accelerated and intensified consumption" are reshaping experience and perception.¹⁶ As Bifo has argued across multiple texts in the past decade or more, "the neuroplastic chaomosis" is underway and we are facing a "neuroplastic dilemma": "Is consciousness able to govern the reshaping of consciousness itself?"¹⁷ I propose we pause to listen to and learn from Lucier's "I Am Sitting in a Room" (1969), a sound art piece about listening, paying attention to how we're listening, and recomposing hearing itself.

My aim with this caesura is to apply rhythmanalysis and Lucier's active listening piece to a contemporary critical, practical problem of attentiveness in contemporary plastic publics: how to self-manage the cultivation and control of attention economies and ecologies amidst systems purpose-built to monopolize, manipulate, and modulate neuroplastic potential and attention, and importantly—as Jayson Harsin points out in his recent work connecting affect theory, neuroscience, Tardean sociology, neuropolitics, and psychopower—this also concerns "*the condition of attention as shaped by new technologies and their programming protocols.*"¹⁸

I selected this piece because it works in the same way a powerful political speech might: by syncing up listeners' brains. Neuroscientific research has demonstrated the more rousing the

acoustic material, the greater the number or regions that will be activated similarly from one person to the next. And moreover, it has demonstrated how *speech and language shape the listening brain*.¹⁹ Alvin Lucier’s “I Am Sitting in a Room” provides us with an artistic excursus to not only theorize Tarde’s elucidation of this mimetic phenomenon as it applies to publics and the composition of publics in present conditions of hypermediation, or to the processual cybernation of publics, but perhaps to become more aware and attentive to our experiencing of it.²⁰

[Pause. Listen here. “I Am Sitting In A Room” (Lovely Music, Ltd., 1981).]

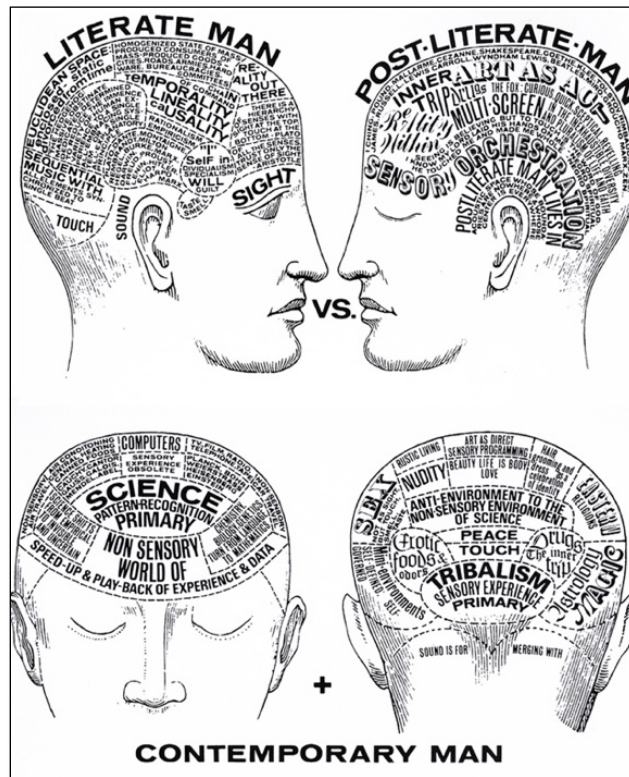


Figure C3. “Sound is for merging with.” From Fluxus artist George Maciunas’ diagramming of “Literate Man vs. Post-Literate Man + Contemporary Man.”

I Am Sitting in a Room

This is how Lucier's sound piece was composed in 1969; unaccompanied and seated in a room, Lucier reads the following short text he wrote for the piece into a microphone (attached to input of tape recorder #1):

I am sitting in a room different from the one you are in now. I am recording the sound of my speaking voice and I am going to play it back into the room again and again until the resonant frequencies of the room reinforce themselves so that any semblance of my speech, with perhaps the exception of rhythm, is destroyed. What you will hear, then, are the natural resonant frequencies of the room articulated by speech. I regard this activity not so much as a demonstration of a physical fact, but more as a way to smooth out any irregularities my speech might have. . . .²¹

He places a speaker exactly where he was sitting. Using the same microphone, he uses a tape recorder to record the speaker as it replays his voice recording.²² He plays his recording back in the same room over and over again, recording each iteration, for a minimum of thirty-two times. His delivery, initially marked by an infrequent stuttering, is smoothed in each re-recording, increasingly becoming indistinguishable from the atmospheric "noise" of the room, which is amplified by each re-recording.

Every room has its own resonant frequencies: how it reflects sound; how it may muffle out or reinforce certain acoustically resonant frequencies. You can't really hear these processes at play in the very first recording, but they're already there.²³ As Lucier's speech gets recorded over and over, the characteristics of the room get reinforced so much that the resonant qualities of the room become audible. Importantly, this awareness involves many degrees of consciousness—of how sound is created and experienced in relation to space, the body, technology—in the creative activity of listening. It is a teaching machine for experiential learning, for interacting with the space, in time, and orienting one's body to its energetic processes, to help build capacities for attention and discernment at various scales (vibrations, rhythms, affects, emotions, thoughts, behaviors, sensations, urges, narratives, actions, etc.).



Figure C4. Cover image for Angèle Chemin, *I'm-sitting-in-a-room-rec-12*, January 17, 2015, Le Bon Accueil, Rennes, France.²⁴

Viral Media

Lucier's piece is inherently and purposefully morphological. It seeks out different acoustic spaces. He has performed it many times, in different formats, in diverse venues, with and without multimedia components.²⁵ For a long time, Lucier's piece has invited mimetic engagement by a wide spectrum of cultural workers, from early engagements by choreographers (such as Viola Farber's *Dune* at BAM in 1972) to more recent interventions by artist and academics, for example: Cory Arcangel's *Iron Maiden's 'The Number of the Beast' compressed over and over as an mp3 666 times* (2004)²⁶; collage artist Residuum's *I Am Sitting in A Room* (2005); Stephanie Loveless' 8-channel sound installation *For Romantic Fantasy* (2009); Jonathan Sterne's MP3-composed *I am Sitting in a Room, Compressing* (2010), Martin Backes' web-based *I am sitting in a machine* (2017), YouTuber MKBHD's *This is What Happens When You Re-Upload a YouTube Video 1000 Times* (2019). To celebrate Lucier's ninetieth birthday, ninety artists performed a marathon twenty-seven-hour stream of "I Am Sitting in a Room" (May 2021).²⁷ Rather than contaminating and mutating like a virus, the piece is constituted by resonance: "It rather takes the shape of a music, whose focal points, though dispersed in time and space, succeed in imposing the rhythm of their own vibrations, always taking on more density. To the point that any return to normal is no longer desirable or even imaginable."²⁸

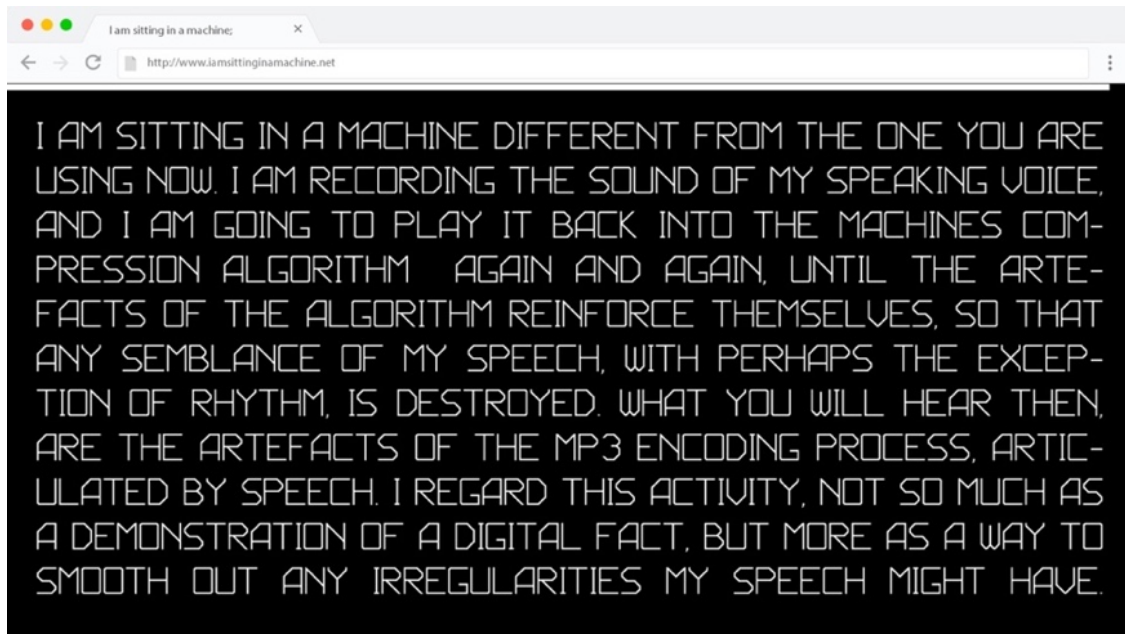


Figure C5. Martin Backes, *I am sitting in a machine* (2017), <https://iamsittinginamachine.net/app.html>.

Room for Learning

Lucier's first performance of "I Am Sitting in a Room" was either live in a "small, bright, somewhat antiseptic room"²⁹ at the Electronic Music Studio at Brandeis University in 1969, *or*, in the living room of his apartment—decorated with period-appropriate furnishings such as upholstered furniture, wall-to-wall carpeting, and windows with floor-length fabric drapes—on a quaint, quiet residential street in the small New England town where Wesleyan University is located, Middletown, Connecticut, on the evening of March 10, 1970. The difference in setting—temporal variations on institutional or intimate space—matters, of course. The version selected for this active-listening exercise is the recording created in the private acoustic space of the artist's living room.³⁰ In all other instances—inclusive of its studio recordings for various LPs—it was performed in public spaces. The space you are inhabiting will have resonant frequencies this dissertation cannot anticipate and cannot control. It may even be your own domestic living space.

Looking to Lefebvre's observation that we only notice rhythm when we sense a "problem," many reviews and didactic overviews of "I Am Sitting in a Room" focus with ableist blindness on the voice of the artist, in particular, how the artist's voice is smoothed, corrected, or beautified by resonance or by feeding back into the "inaudible" sounds of the room he occupies—in brief, that

Lucier has a verbal stutter that is managed or integrated into its technologically “resonant environment.”³¹ Lucier’s aim to manage and modulate his stuttering voice is also put up for review as a technology-assisted achievement. I would argue that rather than correcting or rehabilitating a disability, or by eugenically utilizing a technical “fault” of his speech, or by aiming for its technological erasure, that Lucier’s piece is an exercise for the audience or listener. Not “work” per se, but their important zero work is to not simply hear and interpret, compare or categorize, but to *actively listen*, and as linguistic and associational intelligibility dissolves, to learn how to generate their own synesthetic, more engaged attention, and untrain or let atrophy whatever relations may otherwise distract or hijack their attention.

Active Listening as Work

Regarding the expectation of attentional work by an “active listener,” Dutch STS researcher Stina Hasse argues that we must think of Lucier’s “I Am Sitting in a Room” in terms of its relations of production. In particular, how the “the listener ‘remakes’ the performance through his or her listening.” Hasse’s analysis engages listening as coproduction, and sound as “*a continuous process of creation and an active act of listening.*”³² In “Author as Producer” (1934), Walter Benjamin cites Brecht’s exhortation that the intellectual/writer cannot not simply transmit the apparatus of production without simultaneously transforming it in the direction of socialism (much like Manfredo Tarfuri’s observation ‘you can’t have socialist architecture without socialism’). Like Brecht’s epic theater, the author works towards making the apparatus “better to the degree that it leads consumers to production, in short . . . it is capable of making co-workers out of readers or spectators.”³³ This piece lays bare the “listening positionalities” and protocols that guide normative perception, which is internally constituted through subjectivity itself. Countering normative listening regimes and practices, it engages active listeners in self-reflexive, “critical-affective listening” to become attuned to the experience of what and how we listen and perceive, and how these resonances may become engaged in new plastic compositions.³⁴

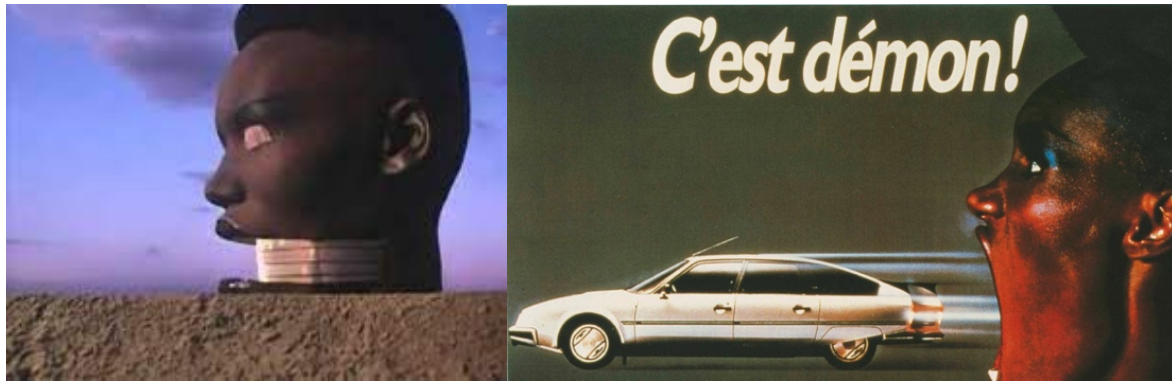


Figure C6. Two 1980s era advertisements (TV and print) for the French car manufacturer Citroën (for the Citroën CX) seemingly resonating from, but actually content for, Grace Jones’ iconic album “Slave to the Rhythm” (1985), composed of eight different versions of the same track.³⁵

Self-Cancellation

Sound artist Louise K. Wilson, whose work explores ways technologies of disaster create new engagements with lost traces of institutional places/spaces, approaches Lucier’s piece as a method for *self-cancellation*,³⁶ a form of cybernetic subjectivation that involves making something creative out of “the inaudible or intangible aspects of the world. Places of fraughtness or difficulty . . . [and] to make something out of that away from the self, away from the voice and subjectivity.” Imagine that this works like biofeedback—referring to the cultural zeitgeist in the 1960s touted as a “drugless LSD,” and also, as a cultural object of the “electronic age of yoga”³⁷—an autonomous technology of the self for the care of the self, involving the informational idea that people could achieve health and self-regulation in their lives by self-monitoring, course correcting, and self-governing their own rhythms. In *There is No Unhappy Revolution*—a work celebrating the ungovernability of becoming and the destituent power of “organizing ourselves so that, in turn, we might disappear within that becoming”—Marcello Tari writes, “*We must hear the rhythm deep within our own selves.* Knowing how to listen is a fundamental aspect of revolutionary spirituality: the rhythm of the world mixes with that of revolt.”³⁸ This caesura then, is a small offering toward the ongoing collective project of rhythmanalysis.

Notes

¹ Alvin Lucier and Douglas Simon, *Chambers* (Middletown, CT: Wesleyan University Press, 1980), 13–14.

² David Graeber, *The Utopia of Rules: On Technology, Stupidity, and the Secret Joys of Bureaucracy* (Brooklyn and London: Melville House, 2015), 89.

³ In laying out his program of somatic abolitionism, Resmaa Menakem discusses at length the racialized differences of how one experiences, discerns between or confuses or conflates, comfort and safety. He argues for a somatically focused abolition praxis because we live in a time in which we are deeply, bodily vulnerable to infection by parasitic media discourses that “wash over us” in waves, “attack after attack,” with “Orwellian . . . high-emotion media.” See Resmaa Menakem, “White Ferality,” *Resmaa Menakem | Embodied Anti-Racist Education*, June 7, 2022, <https://www.resmaa.com/somatic-learnings/white-ferality>.

⁴ Marshall McLuhan, “Living in an Acoustic World,” public lecture at University of South Florida, 1970, <http://marshallmcluhanspeaks.com/lecture/1970-living-in-an-acoustic-world/>.

⁵ Jacques Attali, *Noise: The Political Economy of Music*, trans. Brian Massumi (Minneapolis and London: University of Minnesota Press, 2009/1985/1977), 3.

⁶ Attali, *Noise*, 5 and 10.

⁷ Henri Lefebvre, *Rhythmanalysis: Space, Time, and Everyday Life*, trans. Stuart Elden and Gerald Moore (London and New York: Continuum, 2004), 51.

⁸ In *Rhythmanalysis*’ Introduction, translator Stuart Elden informs the reader that Lefebvre’s early works—before *The Production of Space* and going back as far as the 1920s—focused on temporality over and above spatiality. Unfortunately (for me), most of these works are not yet available in English translation. See *Rhythmanalysis*, xi.

⁹ Lefebvre, *Rhythmanalysis*, 15.

¹⁰ Lefebvre, *Rhythmanalysis*, 22.

¹¹ Lefebvre, *Rhythmanalysis*, 89.

¹² Lefebvre, *Rhythmanalysis*, 10.

¹³ Lefebvre writes: “‘The everyday is simultaneously the site of, the theatre for, and what is at stake in a conflict between great indestructible rhythms and the processes imposed by the socio-economic organisation of production, consumption, circulation and habitat.’” See Lefebvre, *Rhythmanalysis*, 73.

¹⁴ Lefebvre, *Rhythmanalysis*, 27.

¹⁵ Martha Joseph, “Collecting Alvin Lucier’s *I Am Sitting in a Room*,” *MoMA Inside/Out*, January 20, 2015, https://www.moma.org/explore/inside_out/2015/01/20/collecting-alvin-luciers-i-am-sitting-in-a-room/.

¹⁶ Jonathan Crary, 24/7: *Late Capitalism and the Ends of Sleep* (London and New York: Verso, 2014), 39.

¹⁷ Franco “Bifo” Berardi, “Neuro-Aesthetics and the Unimaginable,” in *An Activist Neuroaesthetic Reader*, ed. Warren Neidich (Berlin: Archive Books, 2021), 177.

¹⁸ Jayson Harsin, “Attention! Rumor Bombs, Affect, and Managed Democracy,” in *Propaganda and Rhetoric in Democracy: History, Theory, Analysis*, ed. Gae Lyn Henderson and M.J. Braun (Carbondale: Southern Illinois University Press, 2016), 202–222. Italics are my emphasis. A big thank you to Jack Bratich for introducing me to this incredible body of work.

¹⁹ For example, see Oliver Sacks, “The President’s Speech,” in *The Man Who Mistook His Wife for a Hat* (Toronto: Vintage Canada, 2021/1985). This article famously analyzes the connective impact of “*Klangfarben*” [tone color or evocation] on the human brain provided by the event of collective listening to a speech by then-American President Ronald Reagan—by an audience of aphasia patients who helped diagnose Reagan’s cognitive disintegration. For the comodulation of behavior and sound, see Salomi S. Asaridou and James M. McQueen, “Speech and music shape the listening brain: Evidence for shared domain-general mechanisms,” *Frontiers of Psychology* 4, no. 321 (June 2013), <https://doi.org/10.3389/fpsyg.2013.00321>. See also: A. Charles Catania, “A Natural Science of Behavior,” *Review of General Psychology* 17, no. 2 (June 2013): 133–139, <https://doi.org/10.1037/a0033026>; David Reser and Marcello Rosa, “Perceptual elements in brain mechanisms of acoustic communication in humans and nonhuman primates,” *Behavioral and Brain Sciences* 37, no. 6 (December 2014): 571–572.

²⁰ Lucier's body of work consists of sound experiments with environmental "found" sounds (e.g., ionospheric disturbances, pencils, the alpha rhythms of his brain, his stuttering voice) that defy genre and other categorizations. As such, Lucier's work is often grouped with that of contemporaneous experimental composers John Cage, Pauline Oliveros, and David Tudor, who all heavily utilize environmental sound, subjecting its resonances and rhythms to machine energies, working through and transforming them.

²¹ Alvin Lucier, *I Am Sitting in a Room* (1969), Brandeis University, <https://www.youtube.com/watch?v=g8U0b8Trhjc>. See also Alvin Lucier, *I Am Sitting in a Room* (1970), Middletown, CT.

²² The work exploits the resonant frequencies of whatever room it is that he's sitting in. And through processes of iterative feedback amplifies those frequencies until the sound that remains is very difficult to interpret as speech. Album information is available at <http://www.lovely.com/titles/cd1013.html>.

²³ Thank you, Stephanie Loveless, for so patiently explaining to me how resonance works, in conversation, Toronto, January 2019.

²⁴ Angèle Chemin, *I'm-sitting-in-a-room-rec-12* (2015), digital track composed by Alvin Lucier, interpreted by Angèle Chemin, January 17, 2015, Le Bon Accueil, Rennes, France, <https://sound-art.bandcamp.com/track/im-sitting-in-a-room-rec-12>.

²⁵ The multimedia-performance version exhibited at the Guggenheim in 1970 was a collaboration with his wife, video artist Mary Lucier. See <https://bombmagazine.org/articles/mary-lucier/>.

²⁶ See Cory Arcangel, *Iron Maiden's "The Number of the Beast" compressed over and over as an mp3 666 times*, 2004, <https://coryarcangel.com/things-i-made/2004-004-iron-maidens-number-of-the-beast-compressed-over-and-over.html>.

²⁷ See Alvin Lucier's 90th Birthday Celebration, Issue Project Room, New York City, May 13–14, 2021, <https://issueprojectroom.org/event/i-am-sitting-room-alvin-luciers-90th-birthday-celebration>.

²⁸ Invisible Committee, *To Our Friends*, trans. Robert Hurley (South Pasadena: Semiotext(e), 2015), 12–13.

²⁹ Alvin Lucier and Douglas Simon, *Chambers* (Middletown, CT: Wesleyan University Press, 1980), 36.

³⁰ From the LP *I Am Sitting in a Room*, Lovely Music, 1981: "[M]ade by the composer on October 29 and 31, in the living room of his home in Middletown, Connecticut."

³¹ In *Chambers* (1968), Lucier characterizes rooms, cisterns, subway stations, wells, tunnels, seashells, tea pots, and cupped hands as "large and small resonant environments," an open-ended list that includes, "capsules, craters, empty missiles, cacti, beds, webs, pools, boats, cones, funnels, bones. . . ." See Lucier and Simon, *Chambers*, 3–4.

³² Stina Hasse, "I am Sitting in a Room," *Body, Space & Technology* 11 (2012), <http://doi.org/10.16995/bst.71>. My emphasis.

³³ Walter Benjamin, "Author as Producer," trans. John Heckman, 1970, <https://www.marxists.org/reference/archive/benjamin/1970/author-producer.htm>.

³⁴ Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (Minneapolis: University of Minnesota Press, 2020), 14.

³⁵ In fact, ouroboros-like, Jones' video for the album's single features/cannibalizes footage from the advertising campaign. The entire video is composed of pre-existing commercial footage and iconic photographs of Jones, as mythical shapeshifter, Black-queer-cyborg-dystopian cultural object and more-than-human singularity. We see Jones naked and doubled, explicitly, with a penis and a vagina. The final image is what Jones might look like as a cell undergoing mitosis. Almost forty years later, the music video still appears somewhat futuristic, if only because while also serving the public a pop star, it is critical of the digital pop culture industry's ruthless commercialization of its stars for rabid consumption, spitting out multiple versions of them to appeal to an increasingly fragmented, more-than-human contemporary audience.

³⁶ In future work, I would like to explore the philosophical concept of self-cancellation further, through Schopenhauer, Adorno, Nietzsche, and William S. Burroughs, Gustav Metzger, and other "auto-destructive" artists. ³⁷ Dr. Swami Karmananda Saraswati, "Biofeedback: Electronic Age of Yoga," *Yoga Magazine* (April 1978), <http://www.yogamag.net/archives/1970s/1978/7804/7804bio.html>. See also, Lucier's sound piece *Music for Solo Performer* (1965)—as Andrew Pickering does in *The Cybernetic Brain*, in his chapter on William Grey Walter—in which he performs his own alpha brainwaves, the frequencies of which are below the range of human hearing capacities.

³⁸ On what he means by “destituent” potential, Tari writes: “destituent potential is above all a potential that materially affects the perception of time, destituting the role of contemporary capitalist experience, where historical continuity is tightly bound to a future suffocated by the conjuncture of an eternal present.” See Marcello Tari, *There Is No Unhappy Revolution: The Communism of Destitution* (Brooklyn: Common Notions, 2021).

EXPANDED CONTROL DIAGRAM

The secret power of power and authority is precisely that of having made us, all of us, into our very own cops. —Sylvère Lotringer (1975)¹

The power to punish is not essentially different from the power to cure or to educate. It is only a matter of degree. —Michel Foucault (1995)²

As you may know, ‘diagram’ is really Guattari’s word, and he got it from the cyberneticians. —Brian Holmes (2011)³

Prelude to a Diagram: Expanding the Control Diagram

This is a shorter chapter, drafted to provide a framework for this dissertation’s engagement with the Foucault-Deleuze genealogy of power and to map some of the aesthetico-political and activist neuroaesthetic dimensions of today’s neurocapitalist forms of control. This chapter is not composed as a meticulous genealogy of an expanded control diagram (there are already more than several), but with hope to generate new connections and to contribute to an expanded conceptual library of always adapting, new technologized forms of post-political social control and resistance.

Numerous peer-reviewed and outré-academic journal articles, special journal issues, single-authored texts, and edited collections engage with Deleuze’s theorization of societies of control as unrelenting processes of quantification and optimization deployed on the global population, such as: Frida Beckman’s edited collection *Control Culture: Foucault and Deleuze after Discipline* (2018); *Obsolete Capitalism’s Control, Modulation, and Algebra of Evil in Burroughs and Deleuze* (2018); Tony D. Sampson’s *The Assemblage Brain: Sense Making in Neuroculture* (2016); Seb Franklin’s *Control: Digitality as Cultural Logic* (2015); the *New Formations* special issue on societies of control co-edited by Jeremy Gilbert and Andrew Goffey (2015); Matteo Pasquinelli’s edited collection *Alleys of Your Mind: Augmented Intelligence Traumas* (2015); Orit Halpern’s *Beautiful Data: A History of Vision and Reason since 1945* (2014); Jussi Parikka and Tony D. Sampson’s *The Spam Book: On Viruses, Porn,*

and other Anomalies from the Dark Side of Digital Culture (2009); Raiford Guins' *Edited Clean Version: Technology and the Culture of Control* (2009); *Control and Freedom: Power and Paranoia in the Age of Fiber Optics* by Wendy Hui Kyong Chun (2006); Maurizio Lazzarato, "The Concepts of Life and the Living in the Societies of Control" (2006), William E. Connolly's *Neuropolitics: Thinking, Culture, Speed* (2002); Tiqqun's *The Cybernetic Hypothesis* (2001) and various titles, too numerous to list here, by Warren Neidich and Franco "Bifo" Berardi.

This "Expanded Control Diagram"—or the dissertation's theoretical project of expanding the control diagram—largely re-approaches and refocuses the question of to what degrees new technological forms of networked neuropower and neurolabor act directly upon human subjectivity, and not just on the level of semiotization,⁴ but on the material plasticity of brains to program and terraform *plastic publics*. This diagram expands in different directions, for example, by engaging William Burroughs' militant investigations into cybernetic (automated and autonomic) systems of social control and his recommendation—roughly contemporaneously with Aldous Huxley and Marshall McLuhan—that we become aware, indeed, that we "learn to see more of what's out there . . . to achieve as far as possible a complete awareness of our surroundings"⁵ and pay special attention to the forces that pervasively, in inscrutable ways, viscerally influence the ways we interact, engage, and connect with others and environments as they become increasingly informationalized, datafied, and *semiotically subjugated*.⁶

Michel Foucault began to map out this transformation of power in his lectures at the Collège de France between 1978–1979 (*The Birth of Biopolitics*).⁷ Drawing directly on Foucault, as well as Deleuze and Guattari, Tiqqun refers to this as the modulation of a new "governance mentality," in the same way cybernetics is "a closed feedback loop that is both a paradigm and a technique of government. An organ of power and a way of thinking."⁸ Power operates in control societies through continuous monitoring and instant communication that all at once involve, cannibalize, mutate, and connect subjectivities. This is a "social dilemma,"⁹ in which our inability as "users" to connect without digital coordinates provided by Big Data or social media platforms exposes new limits of human cognition, emotion, and imagination. This connectivity is made of hidden patterns which the majority of people are critically

unaware of, despite constantly being worked over by sense-data algorithms augmenting the invisible hands of capital.

Sense data is the brain's complex construction of lived experience and memory as it cross-references real-time information from one's heart, lungs, immune system, metabolism, and the surrounding world, adjusting as needed to *predict* what happens next, and not, as we have long been trained to mistakenly believe, *react* to experience as it unfolds. In many ways, with today's techniques of neuropower, we are experiencing what Huxley described in the early 1960s as the "Ultimate Revolution": the degree to which behavioral controls had evolved from the formalized physicality of external coercions and enclosures—such as torture, servitude, poverty, imprisonment, ideologies, etc.—to the current, casual, data-driven, biosocial modeling of sensibilities. In a speech delivered at UC Berkeley in 1962, Huxley warned that "we are in the process of developing a whole series of techniques which will enable the controlling oligarchy, who have always existed and presumably will always exist, to get people to *love their servitude*."¹⁰ As he described it, the most efficient method of social control is to mass manufacture consent and complicity:

If you can get people to consent to the state of affairs in which they are living—the state of servitude, the state of having their differences ironed out and made amenable to mass-production methods on the social level—if you can do this . . . you will have a much more easily controllable society.¹¹

Huxley understood that forms of control reach their social limits, at which point, there is the need for "an element of persuasion; an element of getting people to consent to what's happening to them." As early as 1962—arguably earlier if we consider *Brave New World* (1932) as a test site for some of these ideas—Huxley providences the following: "we need to *think* about the problems with automation and more profoundly the problems, which may arise with these new techniques, which may contribute to this ultimate revolution. Our business is to be aware of what is happening, and then to use our imagination to see what might happen, how this might be abused, and then if possible, to see that the enormous powers which we now possess thanks to these scientific and technological advances be used for the benefit of human beings and not for their degradation."¹² Nearly one hundred years after Huxley's original warning, it is precisely this task that energizes this expanded control diagram, especially now

during an epoch in which control has become simultaneously more ungovernable and unthinkable.

Similarly, Deleuze and Guattari noted in *What is Philosophy?*, “the struggle against chaos does not take place without an affinity with the enemy.”¹³ The control diagram is a cyber-capitalist form, a soft machine of subjectification, an “exploding plastic inevitable” that has become exceedingly uncontrollable, ungovernable, beyond human understanding and enunciation.

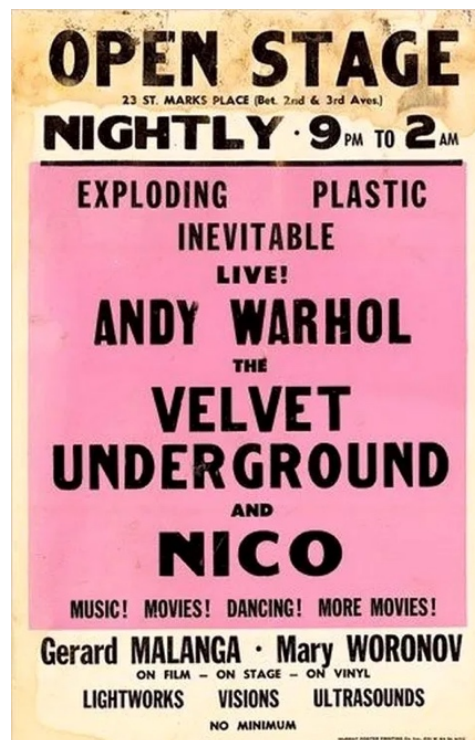


Figure 4.1. Exploding Plastic Inevitable Live!

The Diagram: How Does It Work?

The point of expanding the control diagram is not to periodize control—and in so doing, identify disciplinary control with Fordist machinic processes and cybernetic control with digital technologies, etc.¹⁴ According to the concept developed by Félix Guattari in *Molecular Revolution* (1977; Engl. trans. 1984) and *The Machinic Unconscious* (1979; Engl. trans.

2010)—and again, discussed by Deleuze and Guattari in *A Thousand Plateaus* (1980; Engl. trans. 1987)—the most important thing to emphasize and understand is that diagrams do not function to represent something as it is but to *produce it*. Diagrams are “laboratories where experimentations on tracings are set in interaction” and “can be adapted to all kinds of assemblies.”¹⁵ The most critical question with a diagram is: how does it work? For Deleuze, the diagram is “a cartography that is coextensive with the whole social field.”¹⁶ In his monograph on Foucault this is discussed as the “superfold,” an endless reflexivity, a relation only existing in connection with other feedback forms, including new entanglements with social, political, economic, psychic, and technological relations that inscribe new regimes of power at the level of epigenesis. In the algorithmic present, this feedback relation, like networked cybernetic machines, including human subjectivities, learns to only retain what augments the number of connections at thresholds of discernibility belonging to given assemblages.”¹⁷

Deleuze’s diagram extends Foucault’s work on disciplinary forms of surveillance in the eighteenth and nineteenth centuries and his discourse on biopolitics and power into the mediation and subjectivation of publics via the more modulatory and molecular forms of control (via neuro-biopolitical technologies, such as attention management) in the second half of the twentieth century and early twenty-first century. This produces and mutates into the latest, future stages of molecular control, alternately what Bernard Stiegler calls “neuropower” or “psychopower,” Maurizio Lazzarato calls “noopolitics,” Warren Neidich calls “neuropower” and “the Statisticon,” Brian Holmes calls “the potential personality,” Franco “Bifo” Berardi has begun exploring as the “neuroplastic paradox” of semiocapitalism, and relatedly, what I call plastic publics.¹⁸

What is human agency in an era dominated by power that exerts itself through internalizations of generalized unfreedoms, profligate uncertainty, floods of information (and misinformation), assaults on public emotion and cognition, and continuous neuromodulation that exceeds the limits of human cognitive, perceptual, and physical control? What do we do when contemporary forms of control create and disempower subjects from within? These are the issues this dissertation seeks to engage.



Figure 4.2. Warren Neidich, *The Statisticon* (2016), Terremoto, Mexico.

The Future is Neural Subsumption

It has been argued “the future is here”; the future of knowledge production (and biopolitics, control societies, neuropower) is digital-era mind control and torture that builds upon top-secret laboratories of human experimentation, brainwashing, and military research institutions vested in cultural optimization projects emergent in the cybernetic era of the mid-twentieth century’s paranoic postwar politics. The present form of cybernetic control is omniscient, omnipresent, epigenetic. This is why the future of control and its forms of neural subjugation need to be continually explored from various perspectives. According to Neidich, “neuropower” is *the next stage* in biopower: “populations of brains and the nervous systems to which they are connected are the new focus of sovereignty and governmentalization. (The term ‘brain,’ as described here, is understood as an entity existing inside and outside the skull and includes not only its intracranial substance, but its extensions into the body, especially its somatic and autonomic nervous system, as well as the evolving semiotic, social and cultural relations to which it is tethered.)”¹⁹ Stiegler’s “neuropower” refers to the forces that control bodies, minds, and brains and mediate social relationships.

Neuropower is epigenetic; it is not concerned “with the production of subjectivity in the present but in the creation of a perfect consumer of the future.”²⁰ Epigenesis is the basis for neural plasticity, which refers to the ability of the components of neurons, their axons,

dendrites and synapses plus their extended forms as neural network systems, to be modified by experience—and in particular, by the socialization of experience. Neuroplasticity is currently understood as the brain’s adaptation to stimulus in its internal and external milieus—sometimes both occurring at the same time, as neuroscientists have discovered with regard to minor traumatic brain injuries (mTBIs), whereby the brain is reshaped by trauma and experience. Literally, the brain’s form is altered and thus one’s ability to make sense and to learn is entirely remapped.

Echoing Stiegler and extending Fredric Jameson’s critical exegesis of the unique spatial politics of late capitalism in the early 1990s, Warren Neidich proposes that with the current acceleration of social and technological transformations, “we are here in the presence of something like a mutation in built space itself,” in which humans “have not kept pace” with the intensive, interactive, entangled technologies of hyperspace (despite having been built and programmed by human engineers), and therefore possess inadequate “perceptual equipment to match this new hyperspace.” There are times when the speed of transformation exceeds the capacities of neural plasticity. Jameson expressed “the whole-world system of present-day multinational capitalism” is a “mesmerizing” power that dominates and destroys human cognition; it is an “hysterical sublime.” It is power that works by putting continuous stress upon, and doing harm to, the subjective phenomenological understanding of human experience.²¹ Both Jameson and Neidich argue that capitalism intervenes into the architecture of a social brain and re-engineers publics—internally (inside the brain) and externally (in the environment)—for maximum, exploitative, and efficient engagement with the world of data.²²

Huxley suggested in his UC Berkeley speech that Pavlov’s greatest contribution to the science of behavioral conditioning was not that it was possible to predict and control the behavior of animals and humans by conditioning reflexes, but that these techniques worked much more efficiently and effectively when “applied to animals or humans in a state of either *psychological or physical stress*.”²³ Huxley and Neidich share the view that psychopathologies, are not necessarily negative; they are neural or mental caesuras producing states of fragility and anxiety followed by recuperation. Cybernetic feedback loops between plasticity and control.

Affect and Urgency

We need to rethink everything. —Bernard Stiegler (2016)²⁴

McLuhan opens *The Medium is the Massage* (1967) with a dramatic graphic treatment of A. N. Whitehead’s aphoristic “the major processes in civilization are processes that all but wreck the societies in which they occur.” An oversized ballooning “and how!” stretches across the spine and beyond the margins of the page, finding prologue in the social past *and* resonance in the exclamatory, affective release of a bold white sans serif font forcefully moving across a full-bleed black background. According to Whitehead, a social system is kept together by the *blind force* of instinctive actions, and of instinctive emotions clustered around habits and prejudices. As McLuhan suggests, it is a matter of the maximalization of urgency. Human control over the “major advances in civilization” has exponentially increased since the mid-twentieth century, and at the same time, so have the threats and incontinences.

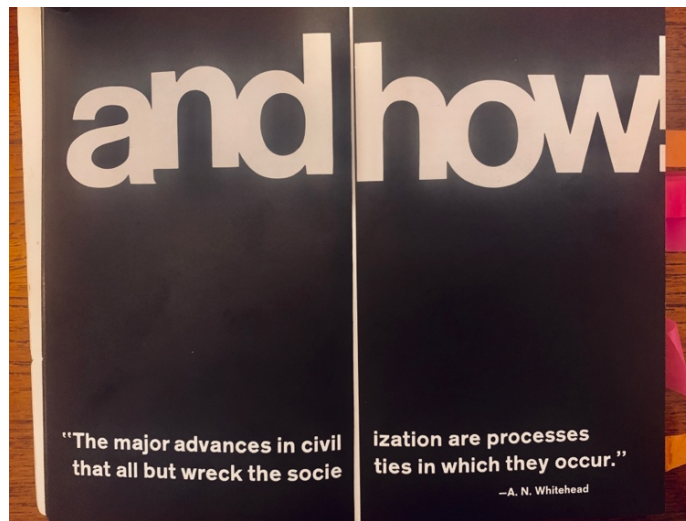


Figure 4.3. “And how!” page spread in Marshall McLuhan and Quentin Fiore’s *The Medium is the Massage* (1967).

In *Trois écologies* [*The Three Ecologies*]*—*an ecosophic text that operates in-between three different registers: the environment, social relations, human subjectivity—Felix Guattari posits that when all the planet’s surfaces have been colonized, human activity and behavior become the new territories or “terminals” that relations of force seek to control and make vectors of

subjectification. These are the new forms of life, now flattened as “lifestyles.” The dominant modes of valorizing human activities will seek to territorialize previously unknown, unknowable dimensions of experience—the molecular domains of sensibility, intelligence, and desire—distinguished from scientific knowing because it is affective. Guattari warned at the time, this incomprehension and unknowing will deteriorate and destroy human subjectivities, human relations, and human-affected environments:

The increasing deterioration of human relations within the socius, the psyche and ‘nature,’ is due not only to environmental and objective pollution but is also the result of a certain incomprehension and fatalistic passivity towards these issues as a whole, among both individuals and governments. Catastrophic or not, negative developments are simply accepted without question.

It is quite wrong to make a distinction between action on the psyche, the socius and the environment. Refusal to face up to the erosion of these three areas, as the media would have us do, verges on a strategic infantilization of opinion and a destructive neutralization of democracy. . . .

If the sciences and technology are to be directed towards more human ends, we evidently require collective forms of administration and control.²⁵

The COVID-19 pandemic provided—as Shannon Mattern, Jenny Odell, Paul Preciado, and others proposed—unprecedented opportunities for a great refusal “against that which is.”²⁶ The pandemic opened space for contemplation by shutting down. The imposed, long social withdrawal from others found periodic respites, perversely, in viral memes and competitive word puzzles as collective mindfulness practices. This has thrown the privilege of those who could afford to work from home and maintain relative safety and immunity into sharp relief, as those who cannot afford this refusal were conscribed as frontline essential workers. It even provided some opportunities for attention to retreat from its role as principal commodity in platform capitalism. This is not to deride refusal—it is a valuable tool for decentering systems—but to draw attention to biases built into systems and data generated by these systems that come to valorize certain forms of refusal and call others into question.

The great refusal was tentatively hoped to have the potential, perhaps, to set off the “great Restoration”—at the bottom of what Mattern noted in a pandemic-themed seminar held on Zoom in Spring 2021, COVID-19 pushed systems—healthcare, politics, data collection,

law, capitalism, etc.—to their breaking point.²⁷ More specifically, she argues, the pandemic has exacerbated problems with these systems—the biases built into these systems, the inequalities they generate within groups and within individuals. Feedback is the engine of this model; it is also the engine of what Bernard Stiegler calls “psychopower,” an ongoing condition of everyday life that we are “totally enveloped within . . . all of us, with our ‘processes of individuation,’ devastated by the conversion of our interior being into data that is delivered for automatic calculations.”²⁸ Control makes interpersonal connection (especially with regards to social groups) a function of “the inaccessible sphere of economic automatism.”²⁹

This dissertation expands upon and explodes Deleuze’s early inquiries into William S. Burroughs’ pioneering explorations of the mutational and metabolic qualities of control in cybernetic culture³⁰ and new plastic forms of anticontrol. Focusing on the progressive creep of incontinence as a mutant form of control, I argue that psychopathologies of so-called cognitive capitalism—as Maurizio Lazzarato outlined in “Does Cognitive Capitalism Exist?”—derive from “our incapacity to invent modes of collective subjectivation that disrupt the subjugating contingencies of contemporary capitalism. . . . [and] our incapacity to invent modalities of collective organization.”³¹ What we are seeing in the last decade or so, with the proliferation and omnipresence of social networking technologies, is the unwinding of self-control and the rewarding of incontinence as a mechanism of social control.

Notes

¹ Sylvère Lotringer, *Schizo-Culture: The Event*, ed. Sylvère Lotringer and David Morris (South Pasadena: Semiotext(e), 2013), 43.

² Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan (New York: Vintage Books, 1995).

³ Brian Holmes, “Society of Control: The Neoliberal Civilization,” European Graduate School Video Lectures, December 8, 2011, <https://www.youtube.com/watch?v=HwDR9HLBIJU>; Brian Holmes, “Network Maps, Energy Diagrams: Structure and Agency in the Global System” (2007), *Continental Drift*, <https://brianholmes.wordpress.com/2007/04/27/network-maps-energy-diagrams/>.

⁴ See Félix Guattari, “Notes on Power and Meaning,” in *Schizo-Culture: The Event*, ed. Sylvère Lotringer and David Morris (South Pasadena: Semiotext(e), 2013), 182. “Semiotization” is semiotic subjugation: the way power operates in control societies through continuous monitoring and instant communication to cannibalize subjectivities.

⁵ William S. Burroughs and Brion Gysin, *The Third Mind* (New York: The Viking Press, 1978), 2.

⁶ See Guattari, “Notes on Power and Meaning,” 182.

⁷ See Michel Foucault, *The Birth of Biopolitics: Lectures at the Collège De France, 1978–79* (New York: Palgrave Macmillan, 2008), 139.

⁸ Tiqqun, “Notes on *The Cybernetic Hypothesis*” (2010), <http://cybernet.jottit.com/>. Originally published in French in *Tiqqun II* (2001), <http://www.archive.org/details/Tiqqun2>.

⁹ See Jeff Orlowski’s docudrama film *The Social Dilemma* (2020), in which creators of “Big Tech” social media technologies warn users—much like Norbert Wiener did in *The Human Use of Human Beings* (1950) and Aldous Huxley did in his “The Ultimate Revolution” speech at UC Berkeley in March 1962—that the tools they have had a direct role in creating, namely the ML-designed “persuasive technologies” developed to augment profit at any cost, have exceeded human control thresholds.

¹⁰ Aldous Huxley, “The Ultimate Revolution,” speech delivered at Berkeley Language Center, UC Berkeley, March 20, 1962, <https://publicintelligence.net/aldous-huxley-1962-u-c-berkeley-speech-on-the-ultimate-revolution/>.

¹¹ Huxley, “The Ultimate Revolution.”

¹² Huxley, “The Ultimate Revolution.” My added emphasis.

¹³ Gilles Deleuze and Félix Guattari, *What is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell (New York: Columbia University Press, 1994), 202.

¹⁴ See, for example, David Berry’s interview with Alexander Galloway, “A Network is a Network is a Network: Reflections on the Computational and the Societies of Control,” *Theory, Culture & Society* 33, no. 4 (June 2015): 151–172.

¹⁵ See Félix Guattari, *The Machinic Unconscious: Essays in Schizoanalysis*, trans. Taylor Adkins (Los Angeles: Semiotext(e), 2011), 172; and Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 141–144, 531 n. 41; 176–180, 177 n. 38). There’s also an excellent discussion on the evolution of the diagram from C.S. Pierce, to Guattari’s rethinking on and use of it, and later Guattari and Deleuze’s repurposing of it in their work on the Philosophy Stackexchange list serve, <https://philosophy.stackexchange.com/questions/913/representation-versus-cartography-in-deleuze-and-guattari>.

¹⁶ Gilles Deleuze, *Foucault*, trans. Seán Hand (Minneapolis: University of Minnesota Press, 1988), 34.

¹⁷ Deleuze and Guattari, *A Thousand Plateaus*, 346.

¹⁸ Warren Neidich, “Computational Architecture and the Statisticon,” in *The Psychopathologies of Cognitive Capitalism: Part Two* (Berlin: Archive Books, 2013), 335. Here, Neidich refers to this constellation of theorists as a process and a “connection of neuro-biopolitical inquiry to post-Operaist ontologies.”

¹⁹ Warren Neidich, *Glossary of Cognitive Activism (For a Not so Distant Future)* (Berlin: Archive Books, 2019), 84.

²⁰ Neidich, “Computational Architecture and the Statisticon,” 361.

²¹ All quotes from Frederic Jameson, *Postmodernism, Or the Cultural Logic of Late Capitalism* (Durham, NC: Duke University Press, 1991). This is riffing on and extending Warren Neidich’s definition of the “hysterical sublime” in *Glossary of Cognitive Activism*.

²² Neidich, “Computational Architecture and the Statisticon,” 349.

²³ Huxley, “The Ultimate Revolution.” Emphasis added.

²⁴ Bernard Stiegler, “The Time Saved Through Automation Must Be Granted to the People,” trans. Sam Kinsley, *Samkinsley.com*, July 18, 2016, <http://www.samkinsley.com/2016/07/18/bernard-stiegler-the-time-saved-through-automation-must-be-granted-to-the-people-translation/>.

²⁵ Félix Guattari, *The Three Ecologies*, trans. Ian Pindar and Paul Sutton (London and New Brunswick, NJ: The Athlone Press, 2000/1989), 41–42.

²⁶ I am referring here to Herbert Marcuse’s “great refusal.” Mattern and Odell discuss refusal more generally. Refusal has been something of a refrain during the COVID-19 crisis, for example: *Dissent* did a full issue featuring discussions of refusal; refusal was the framing subject of the 2021 Transmediale.

²⁷ See Shannon Mattern, interviewed by Alice Jo, “Maintenance and Care During and Beyond the Pandemic: An Interview with Shannon Mattern,” *Brown Political Review*, April 9, 2021, <https://brownpoliticalreview.org/2021/04/maintenance-and-care-during-and-beyond-the-pandemic-bpr-interviews-shannon-mattern/>.

²⁸ Bernard Stiegler, *The Age of Disruption: Technology and Madness in Computational Capitalism*, trans. Daniel Ross (Medford, MA and Cambridge, UK: Polity Press, 2019).

²⁹ Franco Berardi, *After the Future*, ed. Gary Genosko and Nicholas Thoburn (Oakland: AK Press, 2011).

³⁰ In a future iteration of this project, I would like to focus more on the neuroscience of pleasure and addiction in the context of Burroughs’ experiments—with drugs and multimedia—to elude control and destroy control systems.

³¹ Maurizio Lazzarato, “Does Cognitive Capitalism Exist?,” in *The Psychopathologies of Cognitive Capitalism: Part Two*, ed. Warren Neidich (Berlin: Archive Books, 2013), 93.

**RE-READING FOUCAULT:
CONTROL IS LEARNING/LEARNING IS CONTROL**

Such a theory of control by means of a gaze that objectifies, even when it is pulverized into micro-devices, is *passé*. With the simulation device we are no doubt as far from the strategy of transparency as the latter is from the immediate, symbolic operation of punishment which Foucault himself describes. Once again, a spiral is missing here, the spiral in front of which Foucault, oddly enough, comes to a halt right at the threshold of a current revolution of the system which he has never wanted to cross. —Jean Baudrillard, *Forget Foucault* (1977)

Deleuze informs his reader in “Postscript on Control Societies” (1990), that the basis for his theorization of “control societies” (or “societies of control”) is Foucault’s genealogy of the socialization of power: sovereign power (“the power to make die and let live”), disciplinary power (“the power to make live and let die”), and its mutation into what Foucault calls the “security state” (or information-driven “governmental management”).¹ This mutation is what Deleuze calls the *societies of control*, a form of power that increasingly relies on automation and algorithms to manage life, living conditions, practices, and potentialities. It does this by preventing or removing problems of partial knowledge and replacing them with uncertainty, unknowability, and anxieties made tangible by algorithms.

In Foucault’s genealogy, observation is a new episteme of control emerging in disciplinary society that progressively evolves techniques, practices, and regimes of self-surveillance. He maps the development from physical forms of enclosure in the eighteenth and nineteenth centuries—the specific architecture of environments that provide surveillance techniques and technologies aimed at molding (modifying, conforming, and normalizing) behaviors and administering punishments to bodies to the progressive deterritorialization and dematerialization of these forms in the nineteenth century. He describes these changes in terms of constituent power: first, in terms of military capacities and then in terms of the division of labor in the factory. He tells us, “[d]iscipline is no longer simply an art of distributing bodies, of extracting time from them and accumulating it, but of composing forces in order to obtain

an efficient machine.”² For Foucault, more than surveillance itself, *threats* of surveillance and observation are central to disciplinary forms of control. Surveillance produces appearances; observation produces the visible order of things by means of manifesting “analysis, intervention, modifications, and so on”³; and the internalized lack of security (literally *insecurity*) that comes from overcoding collective knowledge produces a need for self-administering techniques of securitization.

There is a significant body of contemporary neurobehavioral research that confirms the affects this particular disciplinary technique sets in motion. The feeling of being watched and also the feeling of being kept out of the informational loop prompts subconscious reputation-management mechanisms to self-monitor, self-censor, and modify behaviors—this is variously called “the audience effect,” “the Hawthorne effect,” “the watching-eyes effect”—and importantly, by changing the way we process information, causes us to act as if we are being watched and our reputation is at stake even when in fact it is not.⁴

As behavioral economists Amos Tversky and Daniel Kahneman explored in their work together, the feeling of being left out of the information loop falls under the category of “choice problem” commonly referred to as risk aversion, which is akin to loss aversion. The fear of loss is an immensely powerful control technique, one that Tversky and Kahneman describe as being “coded” into human perception of prospects and outcomes. The effects of insecurity teach subjects, through techniques for amplifying threat and anxiety, to take on the work of behavior modification and subjugation that was given to torturers, then prison guards, then doctors and psychologists, etc. The self-creation of an anxious, docile subject relies on the continuous creation of “microfascisms”⁵ at the molecular (epigenetic) level. However, instead of operating at the level of the individual, neurogenesis is a variable of enhanced relations to codes and conditionability “in and through an algorithmic media landscape.”⁶

Jean Baudrillard points out in *Forget Foucault*, the original meaning of production is: “to render visible, to cause to appear and be made to appear: *pro-ducere*. . . . Let everything be produced, be read, become real, visible, and marked with the sign of effectiveness; let everything be transcribed into force relations, into conceptual systems or into *calculable energy*.”⁷ This recalls a well-known and widely recounted lecture on the brain’s arousal

(specifically, on the image of mental activity; the brain's work) by neurophysiologist Sir Charles Sherrington. He proposed the most fitting productive analog for the brain is an "enchanted loom where millions of flashing shuttles weave a dissolving pattern, always a meaningful pattern though never an abiding one; a shifting harmony of sub-patterns."⁸ Disciplinary power is not a structure, an institution or an apparatus but a whole set of instruments, techniques, procedures, levels of applications, targets, energies, relations; it is a 'microphysics' or an "anatomy of power, a technology" that works with brains' heightened sensitivity to threat and negative information to modulate neural subpatterns of behavior and attention management.

In *Discipline and Punish*, Foucault devotes a chapter to the Panopticon, an architecturally modeled control apparatus. It is a circular prison designed by Jeremy Bentham in 1791 that arranges space, lighting, and bodies in such a way that prisoners are permanently exposed to their captors. Foucault describes the Panopticon—on more than one occasion—as a "laboratory . . . a machine to carry out experiments, to alter behavior, to train or correct individuals."⁹ The apparatus maximizes the power of surveillance by leveraging the threat of being watched. At every point there is some capacity of observation that ensures omniscience of all of the misdeeds the prisoner may potentially carry out, and then, enforcing shame as a catalyst for auto-correction and conformity to discipline.

Disciplinary society produces a homogenous constituency through the immanent power of normalization.¹⁰ Permanent visibility and its internalization have over time provided for a social reality in which we engage processes of self-observing, self-controlling, self-regulating, and self-creating automatically, without having to think about it. Foucault describes the positive feedback that powers panoptic surveillance in an interview a short time after *Discipline and Punish* was published:

There is an observing gaze that watches over people and that each individual, due to the fact that he feels it weighing on him, finally internalizes to the point where he observes himself: everyone in this way exercises surveillance over and against himself. This is an ingenious formula: a continuous form of power at practically no cost!¹¹

Panoptic surveillance is a technique that induces “in the inmate a sense of conscious and permanent visibility that assures the automatic functioning of power.” Power, a plastic medium, “is constantly being transformed along with the productive forces.” In “The Eye of Power,” an essay written a few years after *Discipline and Punish*, Foucault reflects on the inscription of the Panopticon’s disciplinary power into the social space of a new kind of perception: “already in Bentham’s time the theme of a spatializing, observing, immobilizing—i.e., disciplinary—power was in fact outflanked by much more subtle mechanisms allowing for the regulation of population phenomena, the control of their oscillations, and compensation for their irregularities. Bentham is ‘antiquated’ insofar as he attaches so much importance to observation; *he is completely modern when he stresses the importance of the techniques of power in our societies.*”¹²

Importantly, the original Panopticon came out of a prevalent cultural view of people being transformable and “plastic.” In “The Laws of Habit” (1877), for example, William James writes about the fundamental plasticity of character. Plasticity connotes the *active* potential of transformation, that a thing is simultaneously susceptible to *and can cause* change. For James, plasticity means “the possession of a structure weak enough to yield to an influence, but strong enough not to yield all at once.”¹³ James’ suggestion that human character is essentially plastic is more than a metaphor to describe the responsiveness of a personality to influence or willed intent. Rather, as James argues, it is the basic responsiveness of organic matter, especially nervous tissue, to applied force that makes possible social *transformation* as such.

As Herbert Dreyfus and Paul Rabinow write together in their work on Foucault, “The tendency for power to be depersonalized, diffused, relational, and anonymous, while at the same time totalizing more and more dimensions of social life, is captured, made possible, and summed up in the Panoptic technology.”¹⁴ Bentham wrote that in the Panopticon “each comrade becomes a guardian” and Foucault understood it as the microfascisms at work in everyone becoming the police. He describes this in *Discipline and Punish* via his brief treatment of the Lancaster Method, a monitorial system for pedagogy developed and popularized by British educator Joseph Lancaster in the early nineteenth century.¹⁵ He writes, “the chief function of disciplinary power is to ‘train,’”¹⁶ which also means to condition and optimize. Here the Lancaster Method, or Lancasterian System of Education, with its structure

of distributed surveillance and methods for attentional training, is considered for how it integrates and presages the informational and technological socialization of control.

Lancaster's systems-theory method predates by almost a century Marshall McLuhan's insight that new media technologies extend not only the learning process and the learning environment but also consciousness and the extent to which our attention is directed. Concerned with control's ever-intensifying requirements for participation, McLuhan theorized that "the child of the future is likely to be able to program consciousness with the same ease with which we have previously programmed curricula."¹⁷ Lancaster's school, with its early modern order words, codes of behavior, strict and defined pathways, and reliance on mutual modulation via social feedback provides the basis for inquiring into the hypermediation of conditions of control, such as with plastic publics.

Machines for Learning

They come to me for education . . . like flocks of sheep. —Joseph Lancaster¹⁸

Foucault writes in *Discipline and Punish* that by the early nineteenth century, "the great spectacle of physical punishment disappeared. . . . The age of sobriety in punishment had begun."¹⁹ Corporal punishment or torture, such as the kind administered to the prisoner Damiens in the book's opening pages, is progressively directed inward and transformed into internal mechanisms for self-regulation, self-discipline, and modified behavior. In Lancaster's monitorial schools, as in much of disciplinary society's institutions, bodies are put to work as components of enhanced disciplinary machinery and must become responsive to its forces and rhythms. Foucault argues, "What the apparatuses and institutions operate is, in a sense, a micro-physics of power whose field of validity is situated . . . between these great functionings and the bodies themselves with their materialities and their forces."²⁰

Foucault termed this "biopower." Biopower enables the subjugation and control of bodies from the inside out and makes the boundary between inner and outer worlds indistinct. In *The History of Sexuality*, Vol. 1, he writes: "bio-power was without question an indispensable element in the development of capitalism. . . . It had to have methods of power capable of optimizing forces, aptitudes and life in general without at the same time making

them more difficult to govern.”²¹ With this need, surveillance moves from preventative to predictive maintenance via the labor of mechanically engineered, self-policing and self-punishing subjectivities. And then metabolically, this power extends to neurocapitalism, our current environment of insidious, invasive, and pervasive government and corporate surveillance of publics via communication technologies and neurotechnologies that collect brain data and publicly share it, largely without users’ knowledge or informed consent, and for what purpose?

The techniques of “panoptic modes of power”²² mark an important transformation in the control of nineteenth-century publics: pervasive surveillance, internalized and habituated, affects changes in subjects’ behaviors and in the metabolism of social control. Foucault writes, “He who is subjected to a field of visibility, and who knows it, assumes responsibility for the constraints of power; he makes them play spontaneously upon himself; he inscribes in himself the power relation in which he simultaneously plays both roles; he becomes the principle of his own subjection.”²³ The subject becomes not only the principle of disciplined subjectivity (as stated above), but also the principal test subject and target of discipline in the present and future.

Surveillance, and specifically how it affects the behavior of the observed, is often discussed as a condition or effect specific to technological management of our sense of ourselves in the world. In the case of the nineteenth-century Lancaster method, surveillance is enacted by one’s peers and internalized as a conditioned self-observation mechanism. In the “Docile Bodies” section of *Discipline and Punish*, Foucault presents Joseph Lancaster’s ‘mutual improvement school’ as an example of a new modality of disciplinary time. This new group temporality effectively creates temporal norms via bodily mechanisms for precision, efficiency, automation. It’s easy to see how the program of modern education became the creation and optimization of a workforce that is trainable “machinery for adding up and capitalizing time.”²⁴

It’s important to consider the possibility that Foucault’s paradigm for the disciplinary institution in *Discipline and Punish* is not the Panopticon or Mettray (both are carceral models) but the Lancaster Method or monitorial system of education. In Lancaster’s monitorial system,

order and administration are created out of the “architecture, anatomy, mechanics, [and] economy of the disciplinary body” and transformed into “a machine for learning.”²⁵ Importantly, Foucault points out this transformation is not limited to the monitorial system: “From the seventeenth century to the introduction, at the beginning of the nineteenth, of the Lancaster method, the complex clockwork of the mutual improvement school was built up cog by cog.”²⁶

The Lancaster Method of Mutual Improvement and the “Spatial Imagination”

Discipline is a political anatomy of detail. —Michel Foucault (1995)²⁷

Lancaster’s motto for his method is “*Qui docet, discit*” [He who teaches, learns]. One can clearly find in Lancaster’s approach a model for Foucault’s understanding of how power acts upon bodies, by reforming, informing, and re-forming subjects.²⁸ Lancaster’s method featured an integrated system of continuous observation, public performances of rewards and punishments, and distributed control through the networked mutual modulation of behavior between students. Lancaster’s system of schools was the first nonsectarian popular education, made available at first to working-class families (in Lancaster’s terms, “the industrious classes”) of England and Wales.

Parallels have been drawn between the establishment of the Lancaster System and the introduction of labor-saving machinery.²⁹ Internalizing a sense of order amongst the supposedly unruly children of the urban poor—what Foucault called biopower—was a primary goal of the system. Lancaster notes how the children of wealthier cosmopolitan classes are taught to be obedient in preparatory education so that “that when the pupil is removed to a superior school, much of the drudgery of education is over, and the pupil being ready formed to the master’s hand, to good order and prompt obedience, his future progress is considerably accelerated.”³⁰ Lancaster proposes that by keeping working-class children occupied as teachers in the disciplinary system, coupled to the system as conduits for knowledge and attention, the “disgusting” scenes of disorderly conduct he witnessed would be trained out of them: “nothing conduces so much to good order, or so effectually prevents the natural vivacity of children from becoming troublesome in school, as the active employment of every boy in it. This liveliness, combined with the usual waste of time, makes these schools *disgusting scenes of*

noise and riot. When the attention of children is occupied, quietness unavoidably follows, and that without the aid of rigour to enforce it.”³¹

Lancaster’s monitorial system is regarded as the first global model of school management and classroom design. It was part of a wave of monitorial schools that originated in England in the late 1790s and is associated with the same utilitarian gestalt as Bentham: maximizing the utility of bodies with management. This gestalt allowed for the “abolition of corporal punishment . . . in the name of a progressive, child-centered reform of disciplinary power.”³² The method reached its peak popularity in the United States between 1810 and 1840. By way of explanation, architectural historian Dell Upton examines the cultural need for an educational method that trained its pupils how to treat other people in a more instrumental way and how to treat work and social relations as part of a spatial order necessitating an attention guidance system:

Lancaster’s method found a willing audience among the hard-nosed businessmen who created American public schools in the early nineteenth century. It offered a vision of citizenship, and of the ways in which citizens might be formed, that appealed to the leaders of a nation struggling to define republican citizenship. Those leaders were uncertain how Americans would relate to one another in daily life, especially in cities, but they were confident that carefully conceived spatial arrangements could direct civic life into appropriate channels. Lancasterianism was a strongly spatialized educational method whose distinctive characteristics and potential to create citizens suitable to a new society stimulated the republican spatial imagination. By spatial imagination I refer to a habit of thinking about social relationships physically.³³

American reform thinking aimed to level out social inequalities and develop a hegemonic (easily reproducible) model for the production of ‘good publics’ vis-à-vis ‘good education.’ “In this vision of good public education, students are thought to need intense behavioral control for their own good.”³⁴ The concept of using continual observation and evaluation for the efficient production of new members of urban society—chiefly for modulating Indigenous communities, immigrants, the poor—emerged just as the nascent factory system was machine-producing masses of commodities. There needed to be machines for converting the dynamics of capital accumulation into logics for social reproduction.

A key feature of the Lancaster monitorial method was the importance it placed on networked relations for distributed control, visibility, and spatial configurations. Like machine

parts, monitors were assigned specific placements and discrete tasks to make the system operate as efficiently as possible. This involved not only observing the students, inspecting their work and detecting errors, but also channeling and calibrating the attention of the students to verbal commands, written tasks, codes of conduct, and being in the appropriate place at designated times. Students were equally subject to constant assessment as to the correctness and speed of their learning by their peers. The whole system was one of continual attention management with a strong bias towards performance or maintaining optimal flows of power via feedback. Lancaster writes:

[P]erformances are so visible, that they dare not neglect them; and, consequently, they attain the habit of performing the task easily and well. This effect is produced from one cause: that every thing they do is brought to account, or rendered visible in some conspicuous way or manner.³⁵

Everything was “brought to account.” The goal of learning in this case is the optimization of a machine for extending focused attention between individual students, which can ultimately be utilized in managing the behaviors of the whole social body.³⁶ In an essay addressing Jeremy Bentham’s adaptation of Lancaster’s monitorial method for his education reform program, Elissa S. Itzkin examines the monitorial method as a crude solution to a problem of economic scarcity: “The monitorial schools began as an expedient for the gigantic rise in population and a severe shortage of teachers. Only later did it become a system with the division of labour applied to intellectual purposes.”³⁷

With Foucault’s brief account of the Lancaster method, learning is revealed as a machine for producing industrial subjects: “The school became a machine for learning, in which each pupil, each level and each moment, if correctly combined, were permanently utilized in the general process of teaching.”³⁸ Lancaster’s classrooms, famously managing the tuition of up to 1,000 students at a time because the school was run on the unpaid labor of pupil-teachers (monitors), serves as an early model for *networked or distributed power* as a condition of connection in network culture or networked publics, including how we adapt to managing instant feedback. The students’ learning was “performed with the precision of a productive chain. The production object was located in the child’s brain, and the entire productive process

consisted in shaping its operation mode, with the purpose of turning this operation into a constant that was immediately visible through writing.”³⁹

The Informational Architecture of Lancaster’s Disciplinary System

Much attention has been given to the spatial attributes of Lancaster’s system—the specific rules for its architecture and the design of the schoolroom—as integral to the control of the *whole orderly mechanism*. Lancaster was a strict adherent of the Victorian-era aphorism “a place for everything and everything in its place.” His method had specific requirements regarding the dimensions and spatial layout of the classrooms and school buildings; routines, methods, and precise locations for instruction, discipline, reward, and system maintenance. Less attention has been given to how in Lancaster’s system space was integrated with informational controls to keep the system running smoothly. Lancaster writes, “in a school properly regulated and conducted on my plan, when the master leaves school, the business will go on as well in his absence as in his presence.”⁴⁰

The informational codes were spatially executed codes of command and control for the students’ interaction, what David Hogan refers to as “a complex structure of minute and diffuse micropractices of rules, duties, requirements, punishments and commands.”⁴¹ Students’ behaviors were subjected to constant physical and mental refinements, which required an attentiveness and adaptability to new habits “calculated to beget a love of order and propriety . . . of doing things in a methodical and systematic manner.”⁴² The mutual improvement method targeted attention and learning capacities to optimize workers for the emerging industrial culture.

Lancaster’s use of focused attention, distributed power, publicity, performativity, and mutual modulation presage contemporary information-based forms of control. Lancaster’s method involved two key features: (1) distributed surveillance, and (2) the modeling of behavior by emulation and shame (aka, reward and punishment). The molding of students is accomplished by “controlling and directing the influence lads have over each other, to useful purposes.”⁴³ Lancaster’s goals were to “simplify the means of imparting useful knowledge” by streamlining communication to precise rules and “order words.” Every student potentially

“furnishes the means of instruction . . . [and] also furnishes the material to be made use of in learning, at an expense next to nothing, and in the power of every body to obtain.”⁴⁴ Making the path to dividualization and automation of the system much easier, a number is affixed to each name and each child becomes identifiable by name or number.⁴⁵

The Lancaster Method is in many ways, a *corrective system*. For example, the potential for idleness in the classroom is considered problematic, so to avoid this, students inspect each other’s work as they write together as one class, occasionally receiving an “order word” from the monitor, usually for the repetition of a task, “thus *he* cannot possibly teach the class without improving *himself* at the same time.” They are constantly put to work on rote tasks (such as writing) which direct their attention to an external object, externalizing their attention and enabling the performance of learning to be monitored, for errors to be detected and as a form of punishment, failure is made a spectacle. To avoid negative attention students positively emulate other students and are emulated in turn. “This is, in fact, each boy teaching himself: and it is the duty of the principal monitor not so much to teach them, as to see that they teach one another. . . . In doing this, they correct each other’s faults.”⁴⁶ The mechanics of self-correction are played out in a feedback form.

Within the reform movement, the monitorial system was considered unique for its implementation of *positive reinforcement*. Historian Norman Lederer writes, “Lancaster’s system was unique in that not only did it provide an alternative to the employment of high-priced adult teachers but in that it also relied on rewarding the student for achievement to a far greater extent than it did punishment for failure. The underachieving students suffered through the shame of their performance before their peers, while the successful received medals and even money for their accomplishments.”⁴⁷

Lancaster’s system for rewards and punishments featured high-visibility rituals. Students who excelled were celebrated loudly with the “enviable epithets” of Good Boy, Good Girl or “Class of Merit,” and proudly wore badges of their accomplishments which in turn were goals for subordinate students. As John Franklin Reigart observes, bearing these badges “with much parade and solemnity . . . is the general ambition.”⁴⁸ The publicity of reward in the reward system was not altruistic but a tool for broadcasting what behavior was worthy of emulation, thus affecting subsequent social engineering, with little to no involvement from

engineers, because in the mutual modulation feedback form, social engineering becomes embedded within the students.

Lancaster designed and built elaborate devices for shaming his students, again relying on high visibility and publication of failure. One such device was referred to as the “cradle,” a large basket suspended by a rope from one of the beams over the large, open classroom. Students of all ages were threatened with being put inside the baskets and rocked like an infant in a cradle, since that was considered by Lancaster to be the most mortifying punishment. Often, a sign would prominently display the student’s alleged misdeeds.⁴⁹ This student’s peers were positively encouraged to mock, tease, swing, and by any means, to produce shame in the student. Shame, in turn, provided students with aversion to public censure. Monitors were those students who had already internalized the shame and productively maladapted it into an anticipatory system, just the kind of worker that was needed for industrial society’s factories. Foucault’s observation that the power to punish is essentially the same as the power to educate or cure is fitting to describe the systematic cognitive and affective torture of Lancaster’s pedagogy.

The Education Factory: How Lancaster Anticipated Information Society’s Forms of Controls

Lancaster’s system has been referred to as ‘the factory put into an educational setting,’ productive of robots who learn to act based on emulation but not to think.⁵⁰ It intensively mechanized the educational process by harnessing not only the bodies of students—their days were precisely organized; students were always in motion and never idle; their movement through the school was tightly controlled; their behaviors were subject to routine conditioning and modifications⁵¹—but also by training them to maximize the power of their focused attention for efficient, maximal productivity.

While in hindsight, Lancaster’s system appears less like a factory stamping out identical products and more in line with contemporary forms of social control in information-based societies, Lancaster’s system was and continues to be miscast as an education “factory,” a product of the era in which it emerged. Lancaster repeatedly emphasized that in a school properly regulated and conducted by his plan, when the master leaves school the business goes

on without interruption in his absence as in his presence, *because the authority is not personal*. The school is governed by its system. The system only required the supervision and control of a single adult teacher, who plays a general role in the machinery:

Instead of performing the circumvolution and drudgery of all its motion, like the wheels in the machinery of a watch, he is the main chain wound up, keeping every wheel in motion, and having a regulator when a little too fast, or slow—yet, exhibiting to view a calm, steady motion, without the possibility of idleness. Practice has demonstrated, that. . . . It is the quantity which a teacher makes a circulating medium that alone enriches the minds of his scholars.⁵²

Because authority in Lancaster’s school is distributed and networked, it was seen as not being subject to the unpredictability of human behavior but instead governed by a “well-developed social mechanism,”⁵³ involving the expansion of an impersonal, informational network of microcontrols circulating among the students. The combinatory work of the students was intended to operate like an autonomous correcting machine: noiseless, calibrated to perfection, with error-management and maintenance built into the system’s circular operation. It was not so much knowledge that circulated among students, keeping the system running, as their hyperfocused, rationalized attention. In 1810, Lancaster called this mode of insuring obedience “a novelty in the history of education.”⁵⁴

Lancaster’s school, if we follow Deleuze’s terms describing the elemental composition of societies of control, is not a factory but a corporation. The dematerialization of the headmaster into an anonymous, networked disciplinary gaze eschews the problem of human resources management in favor of automatism. The students inhabit and operate an institution described by Foucault as a “precise system of command” and “a little world of signals to each of which is attached a single obligatory response”⁵⁵: *exercise self-control*.

Lancaster’s mutual improvement system was one of the key pedagogical influences and organizational devices for Bentham’s plan for educational reform, the Chrestomathic School,⁵⁶ along with his architectural model of the Panopticon presented twenty-three years prior to *Chrestomathia* (1816). It is a precursor to the automated systems that discipline and punish all who live under “this new regime of digital data” with its anticipatory energies.⁵⁷

The development of a socialization of control (‘the need to control control’ via the generalization of self-control) is the hallmark of the ‘information society’ but, as we can see

with Lancaster’s monitorial system, has its roots in disciplinary society. In a 1975 interview discussing his recently published *Surveiller et Punir* to an Anglophone audience, Foucault refers to the reflexivity of power—specifically the co-relation of bourgeois power and feudal power—in cybernetic terms:

We must take into account its master strokes, among which, precisely, there is the fact that it succeeded in constructing machines of power that helped in establishing circuits of profit *which in turn reinforce and modify the mechanism of power in a constantly moving and circular fashion*. Feudal power, which functioned above all by means of capital levies and expenditures, drained itself. *Bourgeois power perpetuates itself not by conservation, but by successive transformations*, which accounts for the fact that its arrangement is not inscribed within history as is the feudal arrangement. Which also accounts for its precariousness as well as its inventive resiliency.⁵⁸

A feedback loop of continual attention and observation is used to produce a transformed and improved “class of learners.” Lancaster writes, “*It is not the monitor’s business to teach, but to see that the boys in his class, or division, teach each other.*”⁵⁹ The feedback loop of attention between students and monitors becomes one of permanent utilization and adjustment.

Postscript: A Different Kind of Feedback

Among the fragments that constitute what is left of the 1975 “Schizo-Culture” colloquium (discussed in **Chapter 8**) is the entirety of sociologist Robert Fine’s talk, in which he attempts to relate Jeremy Bentham’s idealization of the Panopticon (independent of the discussion in Foucault’s newly published *Discipline and Punish*) to the ‘Sartrean world of shame,’ which is principally constructed through architecture, then through social terraforms. As Fine remarks, “this was to be a world in which there was to be no escape from the tyranny of objectification.”⁶⁰ Despite this paper’s unpopularity with the colloquium’s attendees (the transcript includes frequent boos and hostile interruptions), it underscores how Lancaster’s monitorial method of mutual modulation is distinct from panoptic power. Namely, a multitude of social technologies for pattern recognition, and then for *active self-tracking*, have proved to be more effective control mechanisms than even the most high-tech surveillance systems.

Bentham’s ideal model for the design of modern prisons, “the Panopticon,” bestowed constant and total powers of observation to the singular figure of the inspector. The gaze was

one-way only, which necessitated two further steps: a) the prisoner was prevented from having a “reciprocal effect” on the “nature of the gaze”⁶¹; and b) prisoners’ isolation from each other, which was a hygienic measure, preventative for contamination of illnesses but also *the communication of insurrectionary ideas*. Dialogue between prisoners, if not thoroughly eliminated, was suppressed and always under surveillance. Moreover, crowds were to be avoided to prevent any such kind of contamination. The prisoner is only to be “seen, but he does not see; he is an object of information, never a subject in communication.”⁶² This strict subjectivization involved catalyzing specific behavioral controls via power that was “visible and unverifiable.”⁶³ For example, prisoners were to be punished for offenses committed by their companions and were encouraged to become inspectors over each other, as were the guards. Failure to inform would brand the inspector as an accomplice. Bentham called this “the principle of mutual responsibility” and referred to this feedback loop as the highest principle of the Panopticon. This chapter explores this power through the Lancasterian learning system, which utilized the mediumization of students, by systematizing social feedback in the disciplinary entrainment of *habits and attention* for mutual reinforcement and systems-wide optimization.

Notes

¹ Foucault writes in “Society Must Be Defended”: “I think that one of the greatest transformations the political right underwent in the nineteenth century was precisely that, I wouldn’t say exactly sovereignty’s old right—to take life or let live—was replaced, but it came to be complemented by a new right which does not erase the old right but which does penetrate it, permeate it. This is the right, or rather precisely the opposite right. It is the *power to ‘make’ live and ‘let’ die*. The right of sovereignty was the right to take life or let live. And then this new right is established: the right to make live and to let die.” See Michel Foucault, “Society Must Be Defended” Lectures at the Collège de France, 1975–76,” ed. Mauro Bertani and trans. Alessandro Fontana (New York: Picador, 1976), 241.

In the context of his lectures on *gouvernementalité* [governmentality] (1978–1979), Foucault introduced “*sécurité*” as a new form of power that required a different way of thinking about governing life in terms of prevention, population, regulation and risk as opposed to the disciplinary form he presented in *Surveiller et punir: Naissance de la prison* (1975) and *L’Histoire de la sexualité* (1976).

² Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan (New York: Vintage Books, 1995), 164.

³ Michel Foucault, *Power (Essential Works, Vol. 3)*, ed. James D. Faubion, trans. Robert Hurley and others (New York: The New Press, 2000), 95.

⁴ Keith Dear, Kevin Dutton, Elaine Fox, “Do ‘watching eyes’ influence antisocial behavior? A systemic review & meta-analysis,” *Evolution and Human Behavior* 40, no. 3 (May 2019): 269–280.

⁵ Jack Z. Bratich, *On Microfascism: Gender, War, and Death* (Brooklyn: Common Notions, 2022).

⁶ Tania Bucher, *If . . . Then: Algorithmic Power and Politics* (New York: Oxford University Press, 2018).

⁷ Jean Baudrillard, *Forget Foucault*, trans. Phil Beitchman, Lee Hildreth, and Mark Polizzotti (New York: Semiotext(e), 2007), 37. Italics are my emphasis.

⁸ Sir Charles Scott Sherrington, *Man on his Nature*, the Gifford Lectures, Edinburgh, 1937–1938 (Cambridge, UK: Cambridge at the University Press, 1940).

⁹ Foucault, *Discipline and Punish*, 203 and 204.

¹⁰ Gilles Deleuze, “Postscript on Control Societies,” in *Negotiations, 1972–1990*, trans. Martin Joughin (New York: Columbia University Press, 1995), 177.

¹¹ Michel Foucault, “The Eye of Power,” *Semiotext(e)*, Vol. 3, No. 2 (1978): 12.

¹² Foucault, “The Eye of Power,” 16. Earlier in this interview with Jean-Pierre Barou, Foucault remarks that “[i]t would be false to state that the principle of visibility has dominated the whole technology of power since the 19th century.”

¹³ William James, “Habit,” in *The Principles of Psychology* (1890), <https://psychclassics.yorku.ca/James/Principles/prin4.htm>.

¹⁴ Hubert L. Dreyfus and Paul Rabinow, *Michel Foucault: Beyond Structuralism and Hermeneutics*, Second Edition (Chicago: The University of Chicago Press, 1983), 192.

¹⁵ The monitorial method was created by Andrew Bell at the Madras Asylum in Madras, India in 1787 and adapted by Lancaster. Both versions of the method applied conceptions of factory discipline, military drills, accounting, and systematic organization to the schoolroom. Both introduced relatively new kinds of educational apparatuses, featuring the constant activity of all students, and both claimed to be able to teach young people to read and perhaps to write very rapidly and very cheaply. For more on the specific educational philosophies of Joseph Lancaster (1778–1838) and how these were realized in the pedagogy and administration of his monitorial schools, see for example: John Hassard and Michael Rowlinson, “Researching Foucault’s Research: Organization and Control in Joseph Lancaster’s Monitorial Schools,” *Organization* 9, no. 4 (November 1, 2002): 615–639; Joseph Lancaster, *Improvements in Education as it Respects the Industrious Classes of the Community* (1805), <http://www.constitution.org/lanc/improvements.htm>; John Franklin Reigart, “The Lancasterian System of Instruction in the Schools of New York,” dissertation submitted to Teachers College, Columbia University, New York City, 1916. The Lancaster Method was written about extensively in the late 1980s and 1990s, initially in the wake of the publication of Foucault’s *Discipline and Punish*, and later in formulating new pedagogies for the post-industrial era, for example, open concept classrooms and MOOCs. It has recently come to my attention that Sara Ahmed devotes a chapter of her recent book *What’s the Use? On the Uses of Use* (Durham, NC: Duke University Press, 2019) to the Lancaster system/mutual improvement

school, in her own project to extend/expand Foucault's attention to the significance of its transformation of teaching, learning, and knowledge.

¹⁶ Foucault, *Discipline and Punish*, 169.

¹⁷ Marshall McLuhan, in *The Child of the Future: How Might He Learn? [with Dr. Marshall McLuhan, Director, Centre for Culture and Technology, University of Toronto]*, NFB, 1964 [@ 55:20–55:51].

¹⁸ Joseph Lancaster, quoted in Webster E. Browning, "Joseph Lancaster, James Thomson, and the Lancasterian System of Mutual Instruction, with Special Reference to Hispanic America," *The Hispanic American Historical Review* 4, no. 1 (February 1921): 54.

¹⁹ Foucault, *Discipline and Punish*, 14.

²⁰ Foucault, *Discipline and Punish*, 26.

²¹ Michel Foucault, *The History of Sexuality, Volume 1: An Introduction*, trans. Robert Hurley (New York: Pantheon Books, 1978), 140.

²² Newman (1998) also shifts emphasis of panopticism's greatest—or worst—trait away from the physical reality of constant observation to the psychic threat of "certainty of the potential" for constant observation. See Neville F. Newman, "Shapes and Spaces: Inside Joseph Lancaster's Monitorial 'Laboratory,'" *The Journal of Educational Thought* 32, no. 2 (August 1998): 143.

²³ Foucault, *Discipline and Punish*, 202–203.

²⁴ Foucault, *Discipline and Punish*, 157.

²⁵ Foucault, *Discipline and Punish*, 165 and 167.

²⁶ Foucault, *Discipline and Punish*, 165.

²⁷ Foucault, *Discipline and Punish*, 139.

²⁸ See for example, Judith Butler, *The Psychic Life of Power: Theories in Subjection* (Stanford: Stanford University Press, 1997); Judith Butler, "Bodies and Power, Revisited," *Radical Philosophy* 114 (July/August 2002), <https://www.radicalphilosophy.com/article/bodies-and-power-revisited>.

²⁹ See, for example, Reigart, *The Lancasterian System*, 8.

³⁰ Lancaster, *Improvements in Education*.

³¹ Lancaster, *Improvements in Education*. Emphasis added.

³² Abigail Bray, "Chemical-Control™: From the Cane to the Pill," in *Deleuze and New Technology*, ed. Mark Poster and David Savat (Edinburgh: Edinburgh University Press, 2009), 84.

³³ Dell Upton, "Lancasterian Schools, Republican Citizenship, and the Spatial Imagination in Early Nineteenth Century America," *Journal of the Society of Architectural Historians* 55, no. 3 (September 1996): 238–254.

³⁴ Adam Laats, "Joseph Lancaster: I Love You but You're Going to Hell," *I Love You but You're Going to Hell: Awkward Conversations about School and Society* (blog), January 29, 2019, <https://iloveyoubutyouregoingtohell.org/tag/joseph-lancaster/>.

³⁵ Joseph Lancaster, *The British System of Education: Being a Complete Epitome of the Improvements and Inventions Practised at the Royal Free Schools, Boroughroad, Southwark* (1810).

³⁶ See Lancaster's *Improvements in Education as it Respects the Industrious Classes of the Community* (1803).

³⁷ Elissa S. Itzkin, "Bentham's Chrestomathia: Utilitarian Legacy to English Education," *Journal of the History of Ideas* 39, no. 2 (April–June 1978): 309.

³⁸ Foucault, *Discipline and Punish*, 165.

³⁹ Leopoldo Mesquita, "The Lancasterian monitorial system as an education industry with a logic of capitalist valorisation," *Paedagogica Historica: International Journal of the History of Education* 48, no. 5 (October 2012): 670.

⁴⁰ Lancaster, *The British System of Education*, 45.

⁴¹ David Hogan, "The Market Revolution and Disciplinary Power: Joseph Lancaster and the Psychology of the Early Classroom System," *Education Quarterly* 29, no. 3 (Autumn 1989): 410–411. See also: Thomas Markus, *Buildings and Power: Freedom and Control in the Origin of Modern Building Types* (London: Routledge, 1993); Neville F. Newman, "Shapes and Spaces: Inside Joseph Lancaster's Monitorial 'Laboratory,'" *The Journal of Educational Thought* 32, no. 2 (August 1998): 139–168; Neville F. Newman, "The Subject of a Disciplined Space: Power Relations in England's Nineteenth-Century Monitorial Schools," PhD diss., McMaster University, 1998, <http://hdl.handle.net/11375/15763>; Upton, "Lancasterian Schools, Republican Citizenship, and the Spatial Imagination."

⁴² Joseph Lancaster, *A Manual of the System of Discipline & Instruction for the Schools of the Public School Society of New-York* (1850). See John Franklin Reigart, “The Lancasterian System of Instruction in the Schools of New York City,” PhD diss., Teachers College at Columbia University, New York, 1916, http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6316626_000/ldpd_6316626_000.pdf.

⁴³ Lancaster, *A Manual of the System of Discipline & Instruction*.

⁴⁴ Lancaster, *The British System of Education*.

⁴⁵ Joseph Lancaster, *The British System of Education*.

⁴⁶ Lancaster, *The British System of Education*.

⁴⁷ Norman Lederer, “Joseph Lancaster and the Monitorial School Movement: A Documentary History,” *Quaker History* 64, no. 2 (Autumn 1975): 128–129.

⁴⁸ Reigart, “The Lancasterian System of Instruction in the Schools of New York City,” 83–84.

⁴⁹ Lancaster, *The British System of Education*.

⁵⁰ As a counterpoint to Foucault’s analysis, see Alvin Toffler, *Future Shock* (New York: Bantam Books, 1970), 400. Toffler describes the “genius” of Industrial-era schools mass producing subjects more compatible with the factory system (emphasis added):

Mass education was the ingenious machine constructed by industrialism to produce the kind of adults it needed. . . . How to pre-adapt children for a new world—a world of repetitive indoor toil, smoke, noise, machines, crowded living conditions, collective discipline, a world in which time was to be regulated not by the cycle of sun and moon, but by the factory whistle and the clock. The solution was an educational system that, in its very structure, simulated this new world. This system did not emerge instantly. Even today it retains throwback elements from pre-industrial society. Yet the whole idea of assembling masses of students (raw material) to be processed by teachers (workers) in a centrally located school (factory) was a stroke of industrial genius. The whole administrative hierarchy of education, as it grew up, followed the model of industrial bureaucracy. The very organization of knowledge into permanent disciplines was grounded on industrial assumptions. Children marched from place to place and sat in assigned stations. Bells rang to announce changes of time. The inner life of the school thus became an anticipatory mirror, a perfect introduction to industrial society. The most criticized features of education today—the regimentation, lack of individualization, the rigid systems of seating, grouping, grading and marking, the authoritarian role of the teacher—are precisely those that made mass public education so effective an instrument of adaptation for its place and time.

⁵¹ This is evident in Lancaster’s own accounts of his method, but also in the critique of his mechanical mass production of “educated children” via the following: “In the Lancasterian school, a permanent action of writing took up almost the entire activity of the student and made this clearly visible. Moreover, writing was the main medium of instruction, that is, the student instructed himself through the repetitive practice of writing, and the purpose was to make students write continuously at as high a pace as possible. All the school activity must be quantified in “results” that are properly recorded and accounted for. In rendering an account to his enterprise subscribers, Lancaster used to inform not only on how many pupils completed their annual instruction but also on how many written words and sums they had done in that period.” See Leopoldo Mesquita, “The Lancasterian monitorial system as an education industry with a logic of capitalist valorisation,” *Paedagogica Historica: International Journal of the History of Education* 48, no. 5 (October 2012): 668.

⁵² Lancaster, *The Lancasterian System of Education*.

⁵³ Mesquita, “The Lancasterian Monitorial System as an Education Industry,” 671.

⁵⁴ Joseph Lancaster, *The British System of Education: Being a Complete Epitome of the Improvements and Inventions Practised at the Royal Free Schools, Boroughroad, Southwark* (1810), <https://ia800701.us.archive.org/8/items/britishsystemed00lancgoog/britishsystemed00lancgoog.pdf>.

⁵⁵ Foucault, *Discipline and Punish*, 166.

⁵⁶ For example, Bentham’s “place-capturing” was based on Lancaster’s system of emulation and competition and replaced corporal punishment with “games” that featured instantaneous reward and punishment; “place-setting” was based on Lancaster’s system of placing students in progressive groups according to their ability and proficiency; the use of visual aids to maximize and reinforce learning as well as giving the students an uninterrupted and totally immersive learning environment. The Chrestomathic School was never built.

⁵⁷ Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* (New York: St. Martin's Press, 2017), 5, 10, 37.

⁵⁸ Foucault, "The Eye of Power." My emphasis.

⁵⁹ Lancaster, *The British System of Education*, 15.

⁶⁰ Robert Fine, "Psychiatry and Materialism, Q&A with Francois Peraldi et al.," *Schizo-Culture: The Event*, 135.

⁶¹ Fine, "Psychiatry and Materialism," 133.

⁶² Foucault, *Discipline and Punish*, 200.

⁶³ Foucault, *Discipline and Punish*, 201.

A CLASSICAL BEHAVIORIST TWIST TO SOCIAL CONTROL

Why do we behave like Americans? Whence come our ideas and ideals? What are the forces which mold our minds? Is the family bankrupt? The church decrepit? Who controls our schools, and what do they teach? What newspapers and books do we read, and how do they influence our behavior? Are the movies and the radio enervating or elevating? Do our political parties adequately represent our opinions on public questions? If not, why do they endure? What function, if any, do lobbyists perform? Are we helpless victims of high-pressure advertising and propaganda? Is there an American Public Mind, and where is it to be found? What are these powers, and whose are the invisible hands pulling the strings which make the puppet public dance? —Peter Odegard, *The American Public Mind* (1930)

Classical behaviorism lies outside the main axes of the Foucault-Deleuze genealogy of modern social control but has strong affinities with both disciplinary and control societies, especially in light of the role classical behaviorist techniques and tools for *training habits and attention* have come to play in shaping public behavior, public opinion, and publics themselves.¹ In 1913, American psychologist and behaviorism's founder John Broadus Watson introduced behaviorism as a scientific means to study learning, habit, and habituation in order to predict and control living organisms, including humans struggling to adapt to the stresses and psychic tensions arising from adjustment to modern forms of social life, labor, and subjection. This chapter considers the American psychological field of behaviorism in relation to the expanded control diagram, acknowledging the influential role classical behaviorist conditioning plays in the evolution and normalization of disciplinary techniques for social control from the late-Victorian era's project to mechanize everyday life onward to the present field of neuroplastic action. In Watson's terms: "Every scientist feels that he makes progress in his field to the extent to which he can gain control over the material with which he works. . . . The psychologist, likewise, having chosen human behavior as his material, feels that he makes progress only as he can manipulate or control it."²

Watson viewed the prediction and control of behavior as the central goal of his project, yet behaviorism is a learning system in which “the environment in the widest sense *forces* the formation of habits.”³ Historian Kerry Buckley writes of this seeming contradiction, “If behaviorism represented the freedom to re-make the individual, it also posed the possibility of directing human activity into predetermined channels.”⁴ Watson’s behaviorism emerged in a “self-consciously progressive culture” and an academic culture oriented toward a “new professionalism.”⁵ In the Victorian-era United States, science and emerging technologies were looked upon to provide solutions to social problems, as new sources of social authority during a period of tremendous and rapid flux, but also, as tools to amplify and accelerate Enlightenment ideals of self-improvement, self-control, and self-mastery into new machine-age modern forms.

Behaviorism is a multiplicity of methodologies in psychology, spanning from roughly 1913 to the 1960s, when the field was eclipsed by social learning theories and cognitive approaches. As a gestalt, behaviorism moved from late-Victorian optimism and an unbounded faith in science to accelerate past all limitations to mid-twentieth century corporate cynicism in which the goal was not to improve humanity, but to condition publics to believe or rationalize the need to “obey” and “consume” whatever American industry had to sell. This transformation was made possible by the migration of behaviorist research from public institutions to private corporations, priming the latter to be able to seize on breakthroughs in human psychology.



Figure 6.1. “CONSUME–STAY ASLEEP–WORK–CONFORM–REPRODUCE–OBEY–BUY–WATCH TELEVISION.”

The aim of this chapter is to bring behaviorism into the expanded diagram of power, in particular with Deleuze's control societies, focusing primarily on John B. Watson's classical behaviorism. David Bakan writes in "Behaviorism and American Urbanization": "Behaviorism must be understood as a cultural expression; and a number of the important features of the complex which behaviorism represented enjoyed a special confluence in the personality and background of this one individual, John B. Watson, 'American.'"⁶ Watson himself described behaviorism as "purely an American production."⁷ Animated by a deep belief in human plasticity, classical behaviorism moved from the public realm of education to the private world of corporations, public relations, and marketing with the aim of transforming the behaviors of groups of people just when the rise of genetics seemed to undermine the theories of social plasticity that had been advanced by William James. Classical behaviorism provided methods useful for molding capitalist subjects in a continuous and variable manner, to suit changing environmental demands. Modifying individuals and social groups to fit into a modern world governed by commodification, and "improving" them as human capital, was particularly well suited to the behaviorist agenda. Jody Nicotra writes, "habit, at least as it operates in classical behaviorism, is really the foundation of capitalist subjectivity."⁸ Watson's classical behaviorism continues to be relevant to understanding the role of habit in shaping global postindustrial capitalism and its publics.

The Disciplinary Roots of Behaviorism

Behaviorism emerged at the height of Progressivism (c. 1890–1920), a nineteenth-century social and political movement designed to bring order out of confusion—out of the weakened social institutions of family, religion, etc. and into new technological, scientific, social, and economic institutions of modernity. Reformist-minded individuals sought order through self-control and self-improvement, specifically through education, and in professions that could contribute to advancing Progressivism's social and political agenda. It is a well-known trope that the period's technological ideals of prediction and control were more than the goals of American science: they were becoming part of the fabric of American social life and social gestalten as well.

Although founded as a psychological scientific school in the United States, behaviorism's roots are in England, in the ambitious nineteenth-century educational programs proposed by a

variety of educators and reform theorists, including Joseph Lancaster and Jeremy Bentham, and their efforts to re-create pedagogy via the monitorial system. The monitorial system of education emerged from the efforts of several British educators, including Robert Raikes, Andrew Bell and Lancaster, who sought to find a secular and economical system that would allow for the extension of education to the working class regardless of religious beliefs. Although Lancaster's method was described variously as a "mechanical system of education," "factory techniques of mass instruction," and a "teaching machine," underlying his system were the beliefs that education should be universal and that learning is fundamentally social.⁹ Here, it seems, Marx's concept of 'living labor' and the new social relationships between humans and machines is met with Lancaster's method of priming students for industrial relations through systemization of rapid social feedback and using students as conduits for learning and maintaining connection through the electric currency of attention.

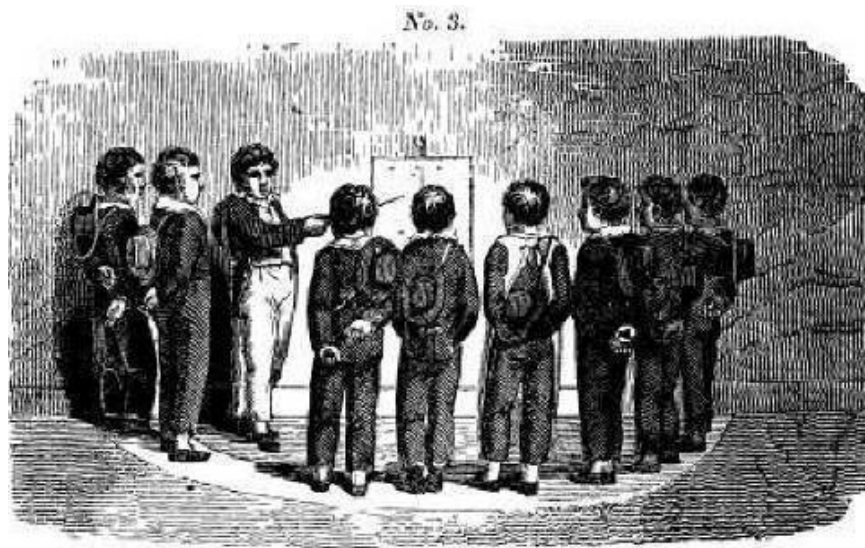


Figure 6.2. "Teaching-training," the monitorial method of learning.

Anticipating methods that would be developed later by Watson, Lancaster's system included somatic exercises, an approach to pedagogy in which physical attentiveness begets intellectual activity. Training is synonymous with drills for creating and maintaining a system and an atmosphere of order, movement, and general intelligence in the school.¹⁰ For example, Lancaster's method for dictation involved the following:

Every teacher and assistant is called upon to make this exercise (Dictation) a matter of careful study, on account of its high utility, as a means of mental and physical culture. . . . You have in it—silence, the first requisite of good order, the erect, easy, and appropriate posture—the eye all alive to catch the first signal,—the muscles all set and braced, for the quick and exact movement. As the eye rests on the word on the board, the mind begins its operations; when it is pronounced, the ear lends its aid;—when each letter is enunciated, the analyzing process is required, and the memory is laid under contribution;—when the response of each falls upon his ear, another impulse is given; and, finally, there is the manual process of writing the word on the slate. In these successive steps . . . *the child can get no chance to play, sleep, be idle, or do mischief.* The process is, itself, the best and most perfect drill for order.¹¹

Jeremy Bentham was an early advocate of Lancaster's monitorial system. As a management style it conformed to his utilitarian desire for order and self-reproducing disciplinary techniques. In *Chrestomathia* (1817), Bentham sets out a materialist theory of language in which he suggests children should learn from direct sense-experience rather than words. His blueprint for the schools of the future is largely based on Lancaster's use of monitors.

As was outlined in the previous chapter, I am trying to make more express/direct the connection between Lancaster's monitorial system, behaviorism, and social shifting between discipline and control. Power in the monitorial system becomes dispersed between bodies so that everyone plays an active role as conduit in disciplining both the autoregulation of the self and the system by which the whole society operates. This shift ultimately constitutes the transition from disciplinary society to control societies. In this new social configuration, the factory—or the school—becomes the living, breathing eugenic model for order and discipline. The interchange between monitorialism and utilitarianism that occurred during this period established behavior modification as a focus of popular education for many years to come.¹² It was taken up by behaviorism, which sought to add scientific rigor and extend behavior modification beyond the systematic operation of individual components in the classroom into programming the social as an entirety.

Behaviorism Emerges in the USA

During the last decades of the nineteenth century, psychology was founded as a science of human nature that would use experimental methods developed by the natural sciences and apply them to the study of human beings.¹³ In the United States, psychology and pedagogy were linked from the beginning. Key figures in this transition included G. Stanley Hall, William James, John Dewey, Bertrand and Dora Russell, Walter Lippmann, Herbert Croly, and Thorstein Veblen.¹⁴

The American psychological tradition also begins in Germany with Wilhelm Wundt's Institute of Experimental Psychology at the University of Leipzig in 1879. Wundt believed that psychology should be scientific and objective in its approach to analyzing consciousness, which he defined as a person's subjective experience of the world and mind. His approach focused on making introspective study—the study of one's own mental states, including emotions and affects—as objective as possible. Systematic introspection was used as a method to gain an understanding of conscious experience and was considered a *highly practiced form of self-examination*.¹⁵

In 1891, Wundt's scientific method was brought to the United States by expatriate British psychologist Edward Titchener, a Professor of Psychology at Cornell University, as “structuralism.” His students were required to perform 10,000 self-observations before they were considered trained observers.¹⁶ Titchener's method enforced strict guidelines for reporting only the raw data of sensory experience (sensations, images, affect), thereby making his method appear to be obtained by more quantitative, objective means than Wundt's.

Both schools pushed psychology from its philosophical roots towards the experimental sciences. However, the introspective method and its subjective notion of mind were at odds with science's demands for predictable and replicable results. And, with structuralism's emphasis on “the experimental study of the mind” lacking an identifiable potential use-value to help solve practical problems that were erupting in the modern world at the time, structuralism could not compete for long with the emerging school of functionalism.

Functionalism, the second school of American psychology, arose in the mid-1890s. “Chicago functionalism,” as it was called, was advanced by University of Chicago professors John

Dewey, George Herbert Mead, Harvey A. Carr, James Rowland Angell, and Harvard University professor William James. Primarily because of its association with Dewey, Mead, and James, functionalism is often conflated with “American pragmatism.” Functionalism, in the words of Dewey, was to be a *philosophical pragmatism* used as a tool to practically address the “problems of men.”¹⁷ Like structuralism, functionalism was concerned with the organization of the mind. Unlike structuralism, which relied on stimulus-response analysis and viewed its subject as a passive receiver of stimuli, functionalism pursued an understanding of the total organism as it functioned in the environment as an active perceiver of stimuli. Functionalism’s focus was on the functional role of mental states (what mental states do, as opposed to what they are). Its view of the brain has proved useful for subsequent materialist theories of mind.

The third school of American psychology to emerge was behaviorism. Behaviorism embodied modern American mythos to the core, with its pragmatism, its emphasis on simple, direct communication, and its commitment to capitalist enterprise by any means necessary.¹⁸ Behaviorists had little to no interest in the interior life of their subjects, having determined that only observable behaviors were appropriate or useful for scientific study.¹⁹ It positioned itself as a rigorous experimental science using objective approaches to observe, predict, and control behavior.

Classic behaviorism emphasized not only that all behavior is learned but also the malleability of human behavior. It widened the focus of psychology from the individual subject to depersonalized groups, with particular interest in developing means for predicting and controlling the behaviors of groups. It is this set of characteristics that helped the school of behaviorism, and by extension the field of American psychology, achieve its desired status amongst the natural sciences. Early proponents of behaviorism as a scientific method believed it would provide not only an explanation for human behaviors and emotional energies, but more importantly, a means for predicting and controlling them.

Fundamental to this was the physiological idea—upheld by behaviorist studies—that organisms are “equipped with plastic forms of activity that require shaping by training or instruction.”²⁰ This behaviorist tenet holds that people and their positions are not fixed or inherited (contra to the historical axioms of Lamarckism, Darwinism, and the roughly contemporaneous

eugenics movement, for example).²¹ Instead, there is a plastic potential that can be trained and shaped via the *transformative* breaking of habits.

John Broadus Watson's Classical Behaviorism

At the crux of John Broadus Watson's classical behaviorism is the tenet "all behavior is learned."²² Watson's graduate studies at the University of Chicago were critical in his evolution of behaviorism from a subset of functionalism to a unique new form of psychology. Under the influence of his committee,²³ which consisted of James Rowland Angell (head of the newly created Psychology Department at the University of Chicago and a major proponent of functionalism), biologist Jacques Loeb (whose views of science as prediction and control, or "scientific determinism," would directly influence Watson's own vision for a deterministic behavioral freedom), as well as neurologist H.H. Donaldson (a major advocate of comparative psychology),²⁴ Watson developed an argument for a predictive science of behavior that carried psychology away from its philosophical roots and aimed it towards the biological sciences. Watson was not at all interested in subjectivity, or, as he called it "a science of the phenomena of consciousness."²⁵ Instead, he wanted to establish a thoroughly objective psychology based on scientific data collected in laboratory experiments where results are "verifiable and can be reproduced and controlled by all trained observers."²⁶ Watson was influenced by his mentor Loeb's notion that humans were principally biological mechanisms. He listened with enthusiasm as Loeb confidently predicted that, "given the correct physiological elements, an 'organic machine' could soon be produced by science."²⁷

Under this influence, in 1913, while a professor in psychology at Johns Hopkins University, Watson delivered a lecture at Columbia University titled "Psychology as the Behaviorist Views It"²⁸ that established behaviorism as a new field of scientific study. It would be distinct from the prevailing philosophical-psychological schools of American functionalism and German structuralism and would offer ameliorative social use to a wide range of cultural apparatuses. Watson recognized data generated by a "scientific psychology [that] plays a practical part in . . . daily routine" would be especially welcomed by "the educator, physician, jurist, and businessman" who "could utilize [behavioral psychology's] data in a practical way."²⁹ It served to

brand behaviorism as a Watson-designed product, but more enduringly as an early example of using behavioral science as a tool for the commodification of information (as useful in itself). The subsequent article this lecture was transformed into became known as “The Behaviorist Manifesto.” In this text, Watson outlined the major features of behaviorism and its “theoretical goal”:

Psychology as the behaviorist views it is a purely objective experimental branch of natural science. Its theoretical goal is *the prediction and control of behavior*.³⁰

While Watson’s behaviorism put the idea into action, it was William James who first observed in 1892 that “all natural sciences aim at practical prediction and control” and claimed that for psychology to become a science, independent of philosophy, this must be its goal too.³¹ The difference in Watson and James’ ideas of what this entails lies in the bifurcation their thought takes with regards to learning and habit. Whereas James highlights experiential learning as developing sensitivity to the mystical contours of material, physical experience, and a heightened state of attention to the environment that teases affect to “the boundaries between forces of the exterior and forces of the interior,”³² Watson’s method is mechanical, depersonalized, and oriented toward commodification. Whereas for James, consciousness means cultivating the awareness of the self not as an “I” but in terms of our cumulative habitual responses to the world, Watson gives no agency to consciousness because it is not objective and thus not a *usable* concept. James advocated for “the blockage or closing off of the habitual Self in order to make way for difference or transformation . . . for a more open, responsive, and ethical relation to the world”³³; Watson aimed to cultivate and design scientifically mandated control of habits in lieu of the self. Peter Odegard referred to this, in an early critique of behaviorism, as “the nickel-in-the-slot mechanistic psychology of the extreme behaviorists.”³⁴ For this very reason, behaviorism in America quickly came to be considered as “a vehicle of social mobility for a rising professional class and . . . a means of providing direct services of social control for an emerging corporate society that sought stability and predictability.”³⁵

The technocratic behaviorist program was a useful tool for social engineering, with its methodology consisting of close observation and conditioning to use, transform, and optimize the habits of social groups. This aligns with the Progressive era’s model of man’s pursuit of success

in the modern world as the “self-made man” who is anything but self-made: behaviors are governed by objective scientific and technological principles; “self-determination” and “self-control” are administered primarily through the control apparatus of modern education and networked with other disciplinary institutions; cultural utilitarianism (the archetypical training and internalization of disciplinary techniques) is distributed; and certain aspects of intelligence are automated.

For Watson—whose work in predicting and controlling psychological automation precedes the automatization of much of social life through the conditioning of internal rhythms to “the future of work”—behaviorism is freedom from the tyranny of under-disciplined habits:

Behaviorism ought to be a science that prepares men and women for understanding the principles of their own behavior. It ought to make men and women eager to rearrange their own lives. . . . I am trying to dangle a stimulus in front of you, a verbal stimulus which, if acted upon will gradually change this universe. For the universe will change if you bring up your children, not in the freedom of the libertine, but in behavioristic freedom—a freedom which we cannot even picture in words, so little do we know of it.³⁶

This declaration strongly echoes the tyrannical man/soul in Plato’s *The Republic*—Socrates’ view that being driven by emotions/appetites is a sort of tyranny over oneself and that freedom lies in well ordered (harmonious) soul/psyche and ultimately, state. We know enough now to imagine what Watson’s idea of “behavioristic freedom” looks like: the absolute control of the scientist or technocrat imposed on subjects’ present and future through practical rules for conduct and behavior; a tyranny over subjectivity en masse, to “free” individuals of failures in their habits and behaviors that don’t contribute to the stability and industry of the social system. Considered thus, Watson’s classical behaviorism primed biopolitical subjects for the modulating rhythms of control societies.

The whole field of human adjustments

Watson defined behaviorism as “the whole field of human adjustments.”³⁷ Referring to behaviorism’s core project of conditioning its subjects, via habit formation, to environmental changes, he said: “Behaviorism is new wine and it will not go into old bottles; therefore I am going

to try to make new bottles out of you.”³⁸ Watson’s conception of behaviorism nonetheless retains some of the Victorian era’s ideation of reform, such as the notion of distributing a hardened subject from mold to mold to create the model subject. This is like the rite of passage Deleuze observes in Foucault’s disciplinary society: “first, the family; then the school (‘you are no longer in your family’); then the barracks (‘you are no longer at school’); then the factory; from time to time the hospital; possibly the prison, the preeminent instance of the enclosed environment.”³⁹

Watson hoped to wipe away that first mold and move straight to the institutional setting of an experimental laboratory. He envisioned the shaping and conditioning of the emotional life of children as a process that ideally begins at birth, in a laboratory setting, and is supervised and administered by scientists rather than parents. This method of training—contra John Dewey’s method which focused on development from within and the cultivation of the capacity for reflective thinking—must be rigorously indoctrinated and cultivated behaviorally via the structuring of habits.

Training a Biological Learning Machine: Controlling Behavior through Stimuli, Adaptation, and Habit

Setting himself apart from Dewey, James, and others whose work in psychology was characterized by the “boundary work”⁴⁰ of pragmatism-philosophy, Watson’s commitment to experimental work put the emphasis on the external behavior of people and their observable reactions to given situations (behavioral data) and outright rejected the significance of internal mental states or processes. Watson was not interested in *how we think* (Dewey 1910) but in retraining and conditioning *how we must act*. Watson’s ideal behaviorist subject is predictable, manipulable, and controllable because s/he is a *learning machine* composed of complexes of habits.

In 1919, Watson began to assemble material for his book *Psychology from the Standpoint of a Behaviorist*.⁴¹ In this text, Watson encapsulates his views of the foundational importance and plasticity of habit. Partially anticipating late-twentieth century and early twenty-first century developments in understanding the neurophysiology of cognition and neural connectivism, Watson viewed habit as the foundation for learned skills and behaviors. For instance, with respect to learning how to speak, he argues that “early word habits are formed in much the same way as are other explicit habits” and that children eventually “make the transition from overt to whispered

and then to implicit language . . . which [becomes] abbreviated, short-circuited and economized.”⁴² These and other implicit responses (e.g., tracing with eyes, hands, and fingers) serve as substitutes for other stimuli and constitute that which we generally mean by “thinking.”

According to British Empiricist David Hume, habit is a principle of human nature. Gilles Deleuze, in his discussion of Hume, raises the possibility that we not only have habits but that *we are habits*.⁴³ Hume was very influential on Watson from his philosophy PhD at the University of Chicago onward. In fact, Watson’s behaviorism weaponizes Hume’s empiricism. In Watson’s view, personality is the total mass of organized habits, instincts, emotions, their combinations, in relation to *plasticity* (the capability of new habit formation or altering of old habits), and *retention* (readiness of established habits to function after disuse). Higher mental processes, like language and thought, are conceived as habits localized in the peripheral neurophysiological musculature. But the basis for human behavior, or the neurophysiological basis of action, is conceived by Watson as “elementary conduction systems which connect the sense organs with the central nervous system and the latter with the muscles and glands.”⁴⁴ It wasn’t until McGill University neuroscientists James Olds and Peter Milner’s work on the reward circuit of neurotransmitters in 1953 that this was discovered to be a physiological fact rather than a metaphor.

Central to Watson’s work was the positivistic idea that a rigorous scientific approach to shaping human behavior was needed to meet the demands of the modern world, replacing the ad-hoc approach that had prevailed throughout most of human history:

[E]very human individual needs the data and laws of behaviorism for organizing his own daily life and conduct . . . [and] since society acting as it has in the past purely upon the basis of medieval tradition, or at best only on a blundering trial-and-error basis, has made such slow progress in understanding and controlling the phenomena of human behavior, human behavior should be made the object of intense scientific study.⁴⁵

The rhetoric strongly echoes engineer Frederick Winslow Taylor’s principles of scientific management. Taylor’s theories were in decline as Watson’s behaviorism was emerging as a new field of study, after dominating the manufacturing industries in the 1880s and 1890s;⁴⁶ however, there are a number of confluences between scientific management and the classical behaviorist school of thought.⁴⁷ The workplace standards administered by Taylor as means of organization and

control (e.g., purposeful technological fragmentation to encourage the development of specialized knowledges and skills; the division of labor between administrators and laborers; the mechanization and automation of tasks previously performed by “unskilled” human laborers; the subjection of the worker to rationalized drives; the subordination of the worker to the clockwork system) were thoroughly assimilated into the industrial means of production. These techniques served as a nomos, or formula, for expanding modern progress beyond Victorian-era ideals via the cultivation of self-discipline, to a technologized discipline and ultimately, to the internalization of this mechanical process via the formation of habits.

As Taylor himself testified before the United States House of Representatives in 1912, scientific management is “not any efficiency device. . . . It is not a new system of figuring costs; it is not a new system of paying men . . . it is not holding a stopwatch on a man . . . it is not time study; it is not motion study.” In fact, it was “not any of the devices which the average man calls to mind when scientific management is spoken of.” On the contrary, it was “*a complete mental revolution on the part of the workingman [and an] equally complete mental revolution on the part of those on management’s side. . . . And without this complete mental revolution on both sides scientific management does not exist.*”⁴⁸ The value given to feedback in these practices and change in worldview associated with their adoption laid the foundation for our “brave new behavioristic world” of learning societies.⁴⁹

Watson’s mental revolution—not of the mind, but of observable behavior—focuses on restructuring reactivity and habits. He argues that a healthy personality consists of defined habit systems, and instincts and emotions that have yielded to social control. Again, this is Plato, recast. Psychopathology, on the other hand, is habit distortion—the failure to eliminate old, unworkable habits and the emotions connected with them as situations change. The proof of this, for Watson, lies in the possibility of “cure.” Through retraining, “the individual is made over from a reaction standpoint and takes his normal place in society.”⁵⁰ “Normal” as the behaviorist views it indicates a psychologically well-adjusted subjective who contributes to, and is productive of, urban-industrial everyday life.

Watson’s displacement of the psychological focus on the interior life of individuals for the objectively observable behaviors of groups falls in line with Foucault’s theorizing of how, with

modernity and technoscientific revolutions in particular, the body becomes an object of knowledge.⁵¹ Without reference to interior states, the study of behaviors amounts to observations (and molding) of the habits of the body in response to stimuli. As such, behaviorism was used as a tool for the emerging technology of social engineering. Indeed, according to Watson, this is the very function of psychology:

It is equally part of the function of psychology to establish laws or principles for the control of human action so that it can aid organized society in its endeavors to prevent failures in such adjustments. It should be able to guide society as to the ways in which the environment may be modified to suit the group or individual's way of acting; or when the environment cannot be modified, to show how the individual may be moulded (forced to put on new habits) to fit the environment.⁵²

Taylor's scientific management had already shown the potential for practices of habit to serve as potent forms of discipline. Watson believed behavior could be retrained or remodeled to accommodate and rapidly adapt to environmental changes in science, industry, and society. This newer, more malleable model emphasizes the social aspect of control, where the result is the enhanced performance of the sum of the component parts, or "the design of the whole culture." The central mechanical task becomes not the functioning of the individual but the system.

In *Behaviorism* (1924), Watson outlined his habit-formation hypothesis: a habit is formed when a particular response becomes regularly linked with a particular stimulus vis-à-vis stimulus-response-reinforcement (see, for example, Thorndike's experiments with cats in the 1890s and Pavlov's experiments with dogs in the early 1900s). These theories of habit-formation—the law of effect for the former and conditioned reflexes for the latter—were also presented as theories of learning. But these approaches were broadened by Watson; concepts of stimulus and response were expanded to "holistic 'situations' and total 'adjustments' of organisms."⁵³ Based on his experimental lab work with white rats, Watson developed his thesis that 'adaptation becomes learning.'⁵⁴

In Watson's vision for a behaviorist utopia, the world is recomposed as a laboratory where from infancy, subjects are always observed, administered, and managed by trained scientists. As with Foucault's disciplinary regimes, behavior is initially shaped by *the observer*; the expert

behaviorist striving towards automatization. With behaviorism, there is a constant push towards techno-omniscience that contributes to a general atmosphere of anticipation, anxiety, and passive helplessness. It is always striving, optimizing, pulling the subject along with its panoptic innovations. Observation is tooled toward conditioning behavioral modifications that are ultimately self-initiated, self-administered, and self-managed by docile subjects. This is how conditioned reflexes work.

The Conditioned Reflex and Behavioristic Determinism

Physiologist Ivan Pavlov and neurologist Vladimir Bekhterev's work with the conditioned reflex had a profound influence on Watson. Pavlov in particular, because of his experimental work to establish the malleability of animal instinct. First, in 1903, by demonstrating how different kinds of conditioning affect the production of saliva in dogs, and much later, in showing how similar dogs and humans are in their capacity to learn and unlearn behaviors.⁵⁵

Classical behaviorism observes patterns of human actions in the mechanical language of reflexes. Contemporaneous with Watson's behaviorism, early twentieth-century neuroscientific theory (e.g., Behkterev and Pavlov) argued that the body acts mechanically on a strictly sensorimotor or input-output reflexive basis. Yet the adaptive reflex is "sharp, quick, and widespread."⁵⁶ In *The Origins of Behaviorism* (1985), O'Donnell states that "Watson's radical formulations . . . involve assumptions of materialistic monism and positivistic insistence of viewing man as a stimulus-response machine and consciousness as epiphenomenon."⁵⁷ Watson's key premise regarding the conditioned reflex in humans is that by controlling inputs, outputs of behavior can equally be manipulated.

Modeled on the success of his experimental trials with animals, in 1916, Watson argued:

Assuming that learning takes place by trial and error in both man and beast . . . an investigation of that phenomenon by controlled experiments on animals could lead not only to an increased efficiency in human learning but ultimately to control over the learning process itself.⁵⁸

As part of his proposal that "children are made not born," Watson advocated for a more scientific way for childrearing to produce happy, efficient, well-adjusted "puppies," responsive and cheerful

when commanded.⁵⁹ In Watson's 1932 broadcast for NBC radio, "How to Grow a Personality,"⁶⁰ we get a more precise vision of Watson's ideas for the purposeful management of child development, principally how it will benefit a behaviorist society with its potential to automatize the training, molding, and shaping of publics. For instance, Watson expressed hope that "future societies would have the ability to produce the personalities they required *on demand*."⁶¹

Watson's work regarding the psychological care of infants and children, particularly his experiments conducted in the 1920s at Johns Hopkins Hospital, drew heavily upon Pavlov's theory of reflexive learning and nineteenth-century American pediatrician Dr. Luther Emmett Holt's doctrine for childrearing with physical and emotional distance. Holt is principally remembered for his popular booklet *The Care and Feeding of Children: A Catechism for the Use of Mothers and Children's Nurses* (first published in 1894), which articulated a deeply Victorian philosophy of austerity parenting, involving strict controls, structure, emotional reserve, discipline and the withholding of touch and affection. Dr. Holt's attention was directed at the most clinical physiological aspects of childcare—the strict routinization of feeding, sleeping, elimination, etc.—and *not* the child's emotional well-being. At a time when a well-adjusted adult was viewed as a creature of habit and self-control, Dr. Holt stressed the importance of imposing regular, adult habits on infants so that they too could learn them. Holt's method was renowned for its training of obedience and self-control. *The Care and Feeding of Children* was reissued dozens of times until the mid-1940s when Holt's reign in childcare advice literature was eclipsed by the emergence of Dr. Benjamin Spock's *The Common Sense Book of Baby and Childcare* (1946), with his postwar commitment to baby-led and Platonic ("Trust yourself. You know more than you think you do") styles of parenting.

Watson claimed Dr. Holt as his methodology's jump-off point for an early childhood education program. Watson believed that total control of a child's environment was essential to the control of the development of his/her behavior, and thus their personality. In particular, he emphasized the importance of scheduled feedings as well as regimens for bathing, sleep, and bowel movements.⁶² Watson proposed the ideal upbringing for infants would be in the controlled environment of the laboratory, under the direct supervision and training of scientific experts, safe from the unwelcome and destructive interventions of coddling parents.⁶³

Following Dr. Holt, he prescribed minimal emotional involvement and the withholding of physical affection so as to better calibrate the child's behavior.⁶⁴ He determined "mother love" to be a dangerous instrument "which may inflict a never healing wound, a wound which may make infancy unhappy, adolescence a nightmare, . . . wreck your adult son or daughter's vocational future and their chances for marital happiness."⁶⁵ According to Watson's worldview, a "child must be brought up along practical lines to fit a given civilization."⁶⁶ And he realized that in order to "socialize individuals to the requirements of the society,"⁶⁷ a child raised behavioristically must also be rapidly and systematically adapting to the behaviors required by modern society and industry at the time.

Underlying Watson's classical behaviorism is not only the belief that social progress is wedded to scientific and technological advances, but also a Darwinian faith in adaptability as means of survival of the species. It was Watson's view that behaviorism "ought to be a science that prepares men and women for understanding the first principles of their own behavior. It ought to make men and women eager to rearrange their own lives, and especially eager to prepare themselves to bring up their own children in a healthy way. . . in behavioristic freedom. . . Will not these children in turn, with their better ways of living and thinking, replace us as a society and in turn bring up their children in a still more scientific way, until the world finally becomes a fit place for human habitation?"⁶⁸



Figure 6.3. In classical behaviorism, early childhood development is framed as early career development.

In *Psychological Care of Infant and Child* (1928) and “Should a Child Have More Than One Mother?” (1929), Watson uses analogies of a sculptor working with wet clay or a blacksmith with molten metal to describe the behaviorist program of shaping the child subject’s emotional and functional profile. Much like Lancaster’s monitorial system in the early nineteenth century, it is an example par excellence of faith in the *science of education* in the early twentieth century. Watson’s utopian ideal for the behaviorist society is a technocratic dictatorship in which subjects, from a very young age, are conditioned to perform—and have unconditional faith in—the technical efficiency that shapes the emerging technologic culture. Test subjects are “molded, stamped, and hardened to become a useful vessel.”⁶⁹ The somatic nervous system is trained to become “intelligent machinery” and “general intelligence”; it is both self-organized and networked with other information machines, communicating via behavioral data.

Selling Behaviorism to Advertising’s Mass Audience

The group mind does not think in the strict sense of the word. In place of thoughts it has impulses, habits, emotions.⁷⁰

Watson’s career as an experimental psychologist ended with a scandal in 1920, after his extramarital affair with a graduate student was made public (by his wife). That same year Watson seamlessly transformed his psychological career into one in advertising with the J. Walter Thompson Company, one of the first agencies to use psychological techniques as advertising strategy. The market was an unknown that required rational, scientific means of understanding and control and upon which experimentation could be carried out on a large scale. Advertising’s leaders worked to develop reliable, reproducible methods to shape the habits of this marketplace’s “good postindustrial capitalist subject”⁷¹ and held the belief that, among other benefits, “[s]cience . . . could, by careful observation, compile statistics that would predict mass trends.”⁷² To paraphrase Watson, the science of advertising and the psychology of selling were one and the same. It was at this moment that not only behaviorism, but the entire field of “psychology . . . moved out of the laboratory and into the marketplace.”⁷³

The goals of contemporary advertising, “the creation of a society of consumers and the control of activities of consumption,”⁷⁴ suited Watson’s skill set perfectly and easily built upon his

past work. Had Bernard Stiegler considered behaviorism in *Taking Care of Youth and the Generations*, he would have likely included it in the historic continuum of modern apparatuses for “programming” subjects with “attention capture devices” which are “aimed at soliciting and exciting not only desires but drives”—which could easily be used to describe modern marketing.⁷⁵

Based largely on the positioning of his work in behaviorism as the science of predicting and conditioning emotional responses, he quickly attained prominence within the agency and by 1923 was its vice president. During this period, Watson developed strategies and techniques for how advertising can understand consumers and thus motivate their consumption habits. Watson’s expanded ethology involved observing and mastering the triggers for the fears and desires of the consumer. His expanded focus on social problems and their behavioral remedies culminated in his 1924 book *Behaviorism*, which aggressively confronts the eugenic fervor sweeping the United States during the first quarter of the century by espousing an extreme and at times polemical environmentalism.⁷⁶ Because human behavior can be trained, Watson posited the following about the state of social institutions in the behaviorist utopia to come:

- **The Family** would become outdated. Watson encouraged parents to treat their children like young adults, with a controlled formality and objectivity that would assuage the long-established pattern of “destructive” and “devastating” effects of parenting, whereby emotional disabilities are inflicted upon children by “overly” affectionate parenting. He advocated for “baby farms” and other means to reallocate the raising of behaviorist subjects to trained medical professionals.⁷⁷
- **Government** would consist of a technocracy managed by behavioral scientists. In a behaviorist utopia, science is the guiding principle for all human endeavors and human subjects are trained to self-administer governance.
- **Education** would instrumentalize Lev Vygotsky’s social constructivist theory that all learning is social. Watson maintained that “the success or failure of . . . society depended upon the absolute control of an educational process that would function, not as a means of acquiring knowledge, but as an instrument of the individual’s socialization.”⁷⁸
- **Law** would be obsolesced. Watson believed the legal profession could be eliminated and all displaced legal professionals were invited to become behaviorists.

- **Police** would also become less necessary, since all utopian citizens would be conditioned from birth.

Some of Watson's most interesting applied behavioral modification research was done as part of his work in advertising, particularly the following: (1) the development of empirical marketing research, which stressed the importance of knowing the consumer through scientific study, i.e., by dissecting the consumer's wants and needs and understanding their habits; (2) the use of testimonials in advertising; (3) the instrumentalization of desire to "hook" (make an addict of) an acquisitive consumer; (4) developing the science behind the eroticization of commodities and their advertisements; (5) developing the science of demographics as part of his attempt to translate behavioral methodology into sales techniques; and perhaps most importantly, (6) pioneering work in personality testing for personnel selection.⁷⁹ Another work of note is his provocatively titled 1928 article "If You're a Failure, Change Your Personality," based on a lecture in which he delivered advice on how to "become a better salesman by changing one's personality to get along with others."⁸⁰ In this lecture, he stated:

If I can get this idea across to you of studying yourself, inventorying yourself as you would a business, writing a description of yourself, shortly you would get into a position to turn loose on the . . . fellow you do business with . . . it is getting yourself into a position where you can predict the other fellow's behavior that puts you in command in a selling situation.⁸¹

To disseminate these ideas as widely as possible, Watson published books in the emerging self-help genre of pop psychology (which he helped to establish) and wrote widely on topics ranging from child-rearing to economics. For a time, it seemed as if 'all America had gone behaviorist': "Everyone . . . was a behaviorist and no behaviorist agreed with any other."⁸² Behaviorism became American psychology's predominant paradigm—a position it held relatively unchallenged for almost half a century, despite being an extremely heterodox field.⁸³

Owing to this mass-market popularization of his ideas by his own skilled self-promotion and his successes at J. Walter Thompson, behaviorism's techniques for the rationalization and conditioning of emotional responses took root in the business world. It is here that the legacy of behaviorism has been most deeply embedded. Watson's work laid the foundation for algorithms

used to precisely microtarget individual consumers in the digital marketplace by observing and analyzing their data behaviors and habits, and for the latest developments in neuromarketing which promise to target the unconscious desires of consumers.

New Human Bottles for a New Technocratic Order

We cannot let labour-saving and thought-saving devices proliferate to the point at which the large majority of mankind can be kept in nervous equilibrium only by conditioning and lies.⁸⁴

This chapter has explored how Watson technologized the training of disciplinary subjects. The Progressive era invested vast resources and energies in scientific materialism to realize the socialization and technologization of control. This was accomplished by automating behaviorist methodologies and finding new ways to legitimize and even reward the conditioning and control of the modern subject. This is the logic of undulating dividuation, whereby modern subjects are the expression of “*the social forms capable of producing them and making use of them.*”⁸⁵

However, as Deleuze makes explicit in his “Postscript on the Societies of Control” (1990), any technology or machine is the expression of a given social form and is neither its cause nor its effect. As one historian puts it, “What behaviorism and psychoanalysis ultimately had in common was a belief in the plasticity of human nature and in the temporality of social institutions. Progressive era beliefs in the malleability of humans, attendant theories of social use and social meliorism, as well as the scientific revolution’s aim to “control progress,” are foundational for control societies. The early twentieth-century view of progress as something that could be produced in a laboratory, with predictable and controllable outcomes, is also integral to this shift in control. The materialism and vision of an imminent technocratic order that underlies the behaviorist program, as both a new science and an ethos created to support a new industrial culture, was foundational for the constitution of control societies.

Behaviorism’s potential appealed to social engineers bent on creating a rational society capable of higher levels of technical efficiency, adaptability, and productivity. As Buckley observes, “behaviorism would facilitate the adjustment of human beings to a society characterized by rapid change.”⁸⁶ Watson is credited with helping to legitimize the modern industrial notions of

efficiency and accuracy as standards of human conduct. He also spent a good majority of his career making the case that emotions, the expression of behavioral processes, could be conditioned to be predictable and controllable and expressed some disbelief that in modernity, “our social reactions . . . remain unstandardized.”⁸⁷

Behaviorism, as a psychological field, a pedagogical tool, a marketing technique, and the science behind our multimodal arsenal of persuasive technologies, has served as a way of understanding the world vis-à-vis consumer practices and lifestyle habits. It provides support for the larger social control program to “harmonize” social relations between labor and capital.⁸⁸ More than a century ago, this harmonization required re-engineering late-Victorian subjectivities predisposed towards scarcity and self-deprivation into modern subjectivities primed for rapid technological adoption and consumption. For Watson, the changing standards of a rapidly industrializing world needed optimized relations between subjects and new technologies, until human-machine syntheses became learned and then “natural.”

Behaviorism, a psychological method conceived as “principles for the control of human action so that it can aid organized society . . . to show how the individual may be molded (forced to put on new habits) to fit the environment,”⁸⁹ plays an integral role in the prehistory of contemporary techniques and technologies for predicting and shaping the behavior of publics and thus serves as the liquid foundation for the transformation from the disciplinary society to societies of control. Its focus on learning and prediction as integral to control makes it an ancestor to cybernetics (prediction enables control at a distance), the science of communication and control that emerged simultaneously with the computer in the World War II era.

Behaviorism is equally vital to the contemporary use of data mining and algorithms to predict and funnel the behaviors of publics. Behaviorist techniques for predicting and controlling behavior laid the ground for today’s “persuasive technologies,” by which subjects are fluid, mutating, agitated and the same time being constantly reimagined, re-understood, and reprogrammed. Neuroscientific advances that have come over the last ten to fifteen years—particularly in the areas of brain visualization and function mapping as well as neuromining and engagement techniques—provide a far more sophisticated picture of the consuming public than twentieth-century behaviorists could have ever dreamed of.⁹⁰

As envisioned by Watson, a behaviorist system would screen out “many a neuropath and many a criminal’ . . . but also produce a higher level of efficiency.”⁹¹ As Buckley outlines in his work on Watson, classical behaviorism appealed to the authority of those who desired a stable, predictable, and controllable social order. The hegemony of Watson’s classical behaviorism was followed by the radical behaviorism of B.F. Skinner, who believed that that people are bound to be manipulated, and whose stated goal was to ensure they are manipulated *effectively*. He measured his success by the absence of resistance on the part of subject and aimed to perfect his techniques to the point that the subject would not even suspect manipulation. Skinner’s “radical” behaviorism emphasized the co-constitutive nature of human learning and the environment of the human actor/subject. His approach introduced the widely practiced concept of “operant conditioning,” which relied on the notion of reinforcement developed by Edward Thorndike in his “law of effect.” According to this theory, all learned behavior is rooted in either a positive or negative response to that action, by reward or punishment.

Behaviorism Crystallized

Behaviorism crystallized and transformed ideas already present in Victorian society that were inextricably linked with faith in progress and rendered them so pervasive that they underly today’s “positivist” scientific thought and persuasive technologies. The Progressive era invested vast resources and energies in scientific materialism to realize the socialization and technologization of control, by finding new ways to legitimize, reward, and automate the conditioning and control of modern subjectivity. This is the logic of undulating dividuation, whereby modern subjects are the plastic expression of the social forms capable of producing them and making use of them.

Yet, the belief in the human capacity to shape one’s own social world—to self-create—is central to behaviorism and progressivism. Behaviorism ultimately made popular its belief in the plasticity of human nature and in the temporality of social institutions. The Progressive era beliefs in the “malleability of humans,”⁹² attendant theories of social use and social meliorism, as well as the scientific revolution’s aim to “control progress,” are foundational for control societies. It’s no accident that classical behaviorism follows a neat chronology from scientific management and the efficiency movement of the late-nineteenth century, that radical behaviorism is roughly

contemporaneous with the so-called “technocracy movement” of the 1930s, and that cognitive psychology—beginning in the 1960s—represents the late-twentieth century technological apotheosis of the behaviorist notion that humans are information machines requiring a nomothetic approach; that is, the behaviorist approach can be generalized in such a way as to be applied to the entire population and “noosphere.” Behaviorism, as psychological field, pedagogical tool, and multimodal arsenal of persuasive technologies, served as foundational for the development of neurocapitalism: a social world mapped by consumer practices, lifestyles, and habits. It supports the larger social control program to harmonize relations between labor and capital.

This chapter has given consideration to how Watson technologized the training of disciplinary subjects, and how behaviorist techniques for predicting and controlling behavior laid the ground for fields as vast as today’s technological paradigms, such as machine learning, which often uses massive quantities of behavioral datasets to gain a competitive edge on human cognition and in particular, the processing of experience, and “persuasive technologies,” by which data subjects are fluid, mutating, agitated and at the same time being constantly reimagined, re-understood, and reprogrammed. In part due to the permeation of behaviorist science into everyday life, there is no longer any such thing as “unadministered life.”

Notes

- ¹ “The chief function of disciplinary power is to ‘train.’” See Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan (New York: Vintage Books, 1995), 169.
- ² John Broadus Watson, *Psychology from the Standpoint of a Behaviorist*, 2nd ed. (Philadelphia: Lippincott, 1924), 7, 35.
- ³ John Broadus Watson, “Image and Affection in Behavior,” *Journal of Philosophy, Psychology and Scientific Methods* 10 (1913): 423. Emphasis mine.
- ⁴ Kerry W. Buckley, “Behaviorism and the Professionalization of American Psychology: A Study of John Broadus Watson, 1878–1958,” PhD diss., University of Massachusetts (1982), 5, <http://scholarworks.umass.edu/dissertations/AAI8210301>.
- ⁵ William O’Donohue and Richard Kitchener (eds.), *Handbook of Behaviorism* (San Diego, London et al.: Academic Press, 1999), 24–25.
- ⁶ David Bakan, “Behaviorism and American Urbanization,” *Journal of the History of the Behavioral Sciences* 2, no. 1 (January 1966): 5–28.
- ⁷ Watson, *Psychology from the Standpoint of a Behaviorist*, vii.
- ⁸ Jody Nicotra, *The Force of Habit: Rhetoric, Repetition, and Identity from Darwin to Drugs*, PhD diss., The Pennsylvania State University (2005), https://etda.libraries.psu.edu/files/final_submissions/2516.
- ⁹ John Franklin Reigart, *The Lancasterian System of Instruction in the Schools of New York*, PhD diss., Teachers College, Columbia University (1916), 22, http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6316626_000/ldpd_6316626_000.pdf. See also: John F.C. Harrison, “Review: Education in Victorian England,” *History of Education Quarterly* 10, no. 4 (Winter 1970): 485–491; Dell Upton, “Lancasterian Schools, Republican Citizenship, and the Spatial Imagination in Early Nineteenth-Century America,” *Journal of the Society of Architectural Historians* 55, no. 3 (September 1996): 238–253.
- ¹⁰ See Reigart, *The Lancasterian System*, 25–26. This is referring to Joseph Lancaster’s *Manual of the System of Discipline & Instruction for the Schools of the Public School Society of New-York* (1850).
- ¹¹ Reigart, *The Lancasterian System*, 25–26. Emphasis added.
- ¹² See for example, Gregory Bartle, “Benthamites and Lancasterians—The Relationship between the followers of Bentham and the British and Foreign School Society during the Early Years of Popular Education,” *Utilitas* 3, no. 2 (November 1991): 275–288.
- ¹³ The first psychological laboratory was founded in 1879 by Hugo Münsterberg in Leipzig, Germany and was committed to the experimental study of sensation and perception.
- ¹⁴ Kerry W. Buckley, *Mechanical Man: John B. Watson and the Beginnings of Behaviorism* (New York: The Guilford Press, 1989), 38, 63, 68, 79, 82–84, 154.
- ¹⁵ In Wilhelm Wundt’s *Volkerpsychologie*, a ten-volume work on social psychology—specifically, how cognition and communication are based on relations in/between social groups and our individual psychologies are based in the social community.
- ¹⁶ Wilhelm Wundt, *Outlines of Psychology*, trans. Charles Hubbard Judd (London and New York: Wilhelm Engelmann, 1907).
- ¹⁷ John Dewey, *Problems of Men* (New York: Philosophical Library, 1946).
- ¹⁸ According to historians of psychology, such as William O’Donohue and Richard Kitchener, American values and historical contingencies contributed to behaviorism’s American character and American residence. These include: the American view of plasticity of the individual; its optimism and utopian world view; its rural, agrarian character, which involves the necessity of understanding, handling, and even training animals; its value placed on mechanical skills (necessary in conducting animal research); its capitalism; its pragmatism (emphasizing the cash value of ideas); its anti-intellectualism (as opposed to more scholastic paradigms such as psychoanalysis); its emphasis on simple, direct communication. See William O’ Donohue and Richard Kitchener (eds.), *Handbook of Behaviorism* (San Diego, London, et al.: Academic Press, 1999), 11–12.
- ¹⁹ Subjectivity and consciousness were not considered legitimate fields of exploration for early behaviorists.
- ²⁰ Buckley, *Mechanical Man*, 68. Buckley recounts Watson’s research in the Tortugas on the migration and nesting habits of terns (pigeons).

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- ²¹ Biologist Jean-Baptiste Lamarck believed that an organism can pass characteristics it develops during its lifetime to its offspring. Naturalist Charles Darwin promoted the belief that organisms select the traits that best serve their perpetuation (their ability to compete, survive, and reproduce). Eugenics, originally developed by Francis Galton, advocates the “higher reproduction” of those with desirable traits and the forced reduction or cessation of reproduction of those with less desirable or undesirable traits (negative eugenics).
- ²² James T. Todd and Edward K. Morris (eds.), *Modern Perspectives on John B. Watson and Classical Behaviorism* (Westport, CT: Greenwood Press, 1994), 98–99.
- ²³ Watson earned his PhD in Psychology from University of Chicago (with a dissertation on animal learning) in 1903.
- ²⁴ Watson studied neurology with Loeb and Donaldson while a student at the University of Chicago. Donaldson was also one of Watson’s academic advisors on his doctoral dissertation.
- ²⁵ John B. Watson, *Behavior: An Introduction to Comparative Psychology* (New York, Henry Holt and Company, 1914), 1.
- ²⁶ John B. Watson, *Behaviorism* (New York and London: Routledge, 1924), 1.
- ²⁷ Buckley, *Mechanical Man*, 41.
- ²⁸ This lecture was performed as the first in a series of eight lectures given by Watson at Columbia University in the winter of 1913. See Watson, *Behavior*, xxxv.
- ²⁹ John B. Watson, “Psychology as the Behaviorist Views It” (1913), *Classics in the History of Psychology*, <https://psychclassics.yorku.ca/Watson/views.htm>. First published in *Psychological Review* 20 (1913): 158–177.
- ³⁰ Watson, “Psychology as the Behaviorist Views It,” 158. Emphasis added.
- ³¹ See William James, “A Plea for Psychology as a ‘Natural Science,’” *Philosophical Review* 1, no. 2 (March 1892): 148. Have also seen this attributed to (within the history of psychology) Walter Bowers Pillsbury, relevant in this case for his work establishing classification of condition for mental attention. See, for example, *Attention* (1908), published in Paris as *L’Attention* (1906). In future work on this subject, I would like to explore this critical and enduring work.
- ³² Nicotra, *The Force of Habit*, 63.
- ³³ Nicotra, *The Force of Habit*, 89–90.
- ³⁴ Peter H. Odegard, “Social Dynamics and Public Opinion,” *The Public Opinion Quarterly* 3, no. 2 (April 1939): 240.
- ³⁵ Buckley, *Mechanical Man*, 175.
- ³⁶ Watson, *Behaviorism*, 248.
- ³⁷ Watson, *Behaviorism*, 11.
- ³⁸ Watson, *Behaviorism*, 10.
- ³⁹ Gilles Deleuze, “Postscript on the Societies of Control,” *October* 59 (Winter 1992): 3.
- ⁴⁰ Francesca Bordogna, *William James at the Boundaries: Philosophy, Science, and the Geography of Knowledge* (Chicago: University of Chicago Press, 2008).
- ⁴¹ See R.J. Herrnstein’s introduction to Watson’s *Behavior* (1967 ed.), xxviii.
- ⁴² Watson and Watson, *Psychology from the Standpoint of a Behaviorist*, 318, 322–323.
- ⁴³ Gilles Deleuze, *Empiricism and Subjectivity: An Essay on Hume’s Theory of Human Nature*, trans. Constantin V. Boundas (New York: Columbia University Press, 1991), 30.
- ⁴⁴ Watson, *Behaviorism*, 174–175.
- ⁴⁵ Watson, *Behaviorism*, 8–9.
- ⁴⁶ In 1912, Frederick Winslow Taylor was called before the US House of Representatives to defend “Taylorism,” the new data-based management system for human workers as he had defined it in *The Principles of Scientific Management* (1911). During the hearing, Taylor’s ideas, claims, and techniques were exposed to sustained scrutiny and cross-examination and ultimately were determined to be dehumanizing and “un-American.” His popularity surged after the hearings. See Frederick Winslow Taylor, *Scientific Management, Comprising: Shop Management, The Principles of Scientific Management, Testimony Before the Special House Committee* (Westport, CT: Greenwood Press, 1947).
- ⁴⁷ In *Psychology and Industrial Efficiency*, Harvard psychologist Hugo Münsterberg presented psychology as the logical extension to scientific management. See Hugo Münsterberg, *Psychology and Industrial Efficiency* (Boston: Houghton Mifflin Company, 1913); Matthew Hale, Jr., *Human Science and Social Order: Hugo Münsterberg and the Origins of Applied Psychology* (Philadelphia: Temple University Press, 1980).

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- ⁴⁸ Daniel Nelson (ed.), *A Mental Revolution: Scientific Management since Taylor* (Columbus: Ohio State University Press, 1992).
- ⁴⁹ Buckley, *Mechanical Man*, 133.
- ⁵⁰ Buckley, *Mechanical Man*, 133–134.
- ⁵¹ See, for example, Foucault, *Discipline and Punish*.
- ⁵² John B. Watson, “An Attempted Formulation of the Scope of Behavior Psychology,” *The Psychological Review* 24, no. 5 (September 1917): 329.
- ⁵³ Paul Creelan, “Watson as Mythmaker: The Millenarian Sources of Watsonian Behaviorism,” *Journal for the Scientific Study of Religion* 24, no. 2 (June 1985): 207. Behaviorism is recurrent whenever social explosions of conspiracism, millenarism, and the “paranoid style”—as discussed by Richard Hofstadter in “The Paranoid Style in American Politics” (1964)—emerge.
- ⁵⁴ The subject of Watson’s doctoral dissertation was “Animal Education: An Experimental Study on the Psychical Development of the White Rat, Correlated with the Growth of its Nervous System” (1903), University of Chicago.
- ⁵⁵ Ivan Pavlov, “The Experimental Psychology and Psychopathology of Animals” (1903), paper presented at 14th International Medical Congress, Madrid, Spain, April 23–30, 1903.
- ⁵⁶ John B. Watson, “The place of the conditioned-reflex in psychology,” *Psychological Review* 23, no. 2 (1916): 89–116.
- ⁵⁷ John M. O’Donnell, *The Origins of Behaviorism: American Psychology, 1870–1920* (New York: New York University Press, 1985), x and 207–208.
- ⁵⁸ Buckley, *Mechanical Man*, 63.
- ⁵⁹ John B. Watson and Rosalie Rayner Watson, *Psychological Care of Infant and Child* (London: George Allen & Unwin Ltd., 1928), 6–7, <https://archive.org/details/dli.ernet.7917/mode/2up>.
- ⁶⁰ John B. Watson, “How to Grow a Personality,” radio broadcast, National Broadcasting Company, January 16, 8:45 p.m. EST, reprinted by the University of Chicago Press, 1932.
- ⁶¹ Buckley, *Mechanical Man*, 173. My emphasis.
- ⁶² As an example of the extremity of Dr. Holt’s method, he advocated that training children to regularly evacuate their bowels, at “exactly the same time every day,” should be implemented by the second month of the infant’s life.
- ⁶³ The most well-known study is Watson and Rosalie Rayner’s 1920 conditioning of the nine-month-old infant “Albert B.,” whom they described in their exposition of the experiment as “normal,” “healthy,” and “stolid and unemotional.” In John B. Watson and Rosalie Rayner, “Conditioned Emotional Reactions,” *Journal of Experimental Psychology* 3, no. 1 (1920): 1–14.
- ⁶⁴ Dr. Holt’s method of withholding maternal touch was statistically proven to spike rates in infant mortality in institutions where his method was practiced.
- ⁶⁵ Watson and Watson, *Psychological Care of Infant and Child*, 87.
- ⁶⁶ Watson and Watson, *Psychological Care of Infant and Child*, 185.
- ⁶⁷ William E. Akin, *Technocracy and the American Dream: The Technocrat Movement, 1900–1941* (Berkeley: University of California Press, 1977), 142.
- ⁶⁸ Watson, *Behaviorism*, 248.
- ⁶⁹ Buckley, *Mechanical Man*, 169; Watson and Watson, *Psychological Care of Infant and Child*, 47.
- ⁷⁰ Edward Bernays, qtd. in T. J. Jackson Lears, “From Salvation to Self-Realization: Advertising and the Therapeutic Roots of the Consumer Culture, 1880–1930,” *The Culture of Consumption: Critical Essays in American History, 1880–1980*, ed. Richard Wrightman Fox and T. J. Jackson Lears (New York: Pantheon/Random House, 1983), 20.
- ⁷¹ See also Nicotra, *The Force of Habit*.
- ⁷² Buckley, *Mechanical Man*, 135.
- ⁷³ Buckley, *Mechanical Man*, 144.
- ⁷⁴ Buckley, *Mechanical Man*, 137.
- ⁷⁵ Bernard Stiegler, *Taking Care of Youth and the Generations*, trans. Stephen Baker (Stanford: Stanford University Press, 2010), 13.
- ⁷⁶ For the behaviorists, “environmentalism” is synonymous with the belief that personality is a product of the environment.
- ⁷⁷ Buckley, *Mechanical Man*, 162–163. For more on Watson’s “baby farm” idea. See also Watson and Watson, *Psychological Care of Infant and Child* (1928).

⁷⁸ Buckley, *Mechanical Man*, 166.

⁷⁹ Watson began this work during his service in WWI as a Major in the US Army Signal Corps, where he conducted research with the Military Intelligence Division, applying scientific methods to personnel selection and training. He's responsible for creating some of the first aptitude tests for US pilots and contributing to the popularization of applied psychology.

⁸⁰ See Diane DiClemente and Donald A. Hantula, "John Broadus Watson, I-O Psychologist," *The Industrial-Organizational Psychologist* 37, no. 4 (April 2000), <http://www.siop.org/tip/backissues/TipApril00/7Diclemente.aspx>.

⁸¹ John B. Watson, lecture given at White Sulphur Springs to members of the Drug Manufacturer Association, 1934. Typescript contained in the John Broadus Watson Papers, Manuscript Division, Library of Congress, Washington, DC: 3.

⁸² Edwin Garrigues Boring, *A History of Experimental Psychology*, 2nd ed. (New York: Appleton-Century-Crofts, 1950), 645.

⁸³ Compounding the influence of behaviorism was Percy William's Bridgman's 1927 argument for "operationism," which states that scientific concepts should be defined by the operations used to measure them (see *The Logic of Modern Physics*). In experimental psychology, hunger would be defined by the length of time since the last meal or as the number of calories consumed in a meal; that is, by the operations used to measure the concept. According to operationism, if the data is not observable it is not measurable; concepts that cannot be tested by observation are thus pointless.

⁸⁴ Dennis Gabor, *Inventing the Future* (New York: Alfred A. Knopf, 1964).

⁸⁵ Gilles Deleuze, "Postscript on Control Societies" in *Negotiations, 1972–1990*, trans. Martin Joughin (New York: Columbia University Press, 1995), 180.

⁸⁶ Buckley, *Mechanical Man*, 97.

⁸⁷ Watson, *Behaviorism*, 115.

⁹³ See, for example, Franco "Bifo" Berardi, *And. Phenomenology of the End: Cognition and Sensibility in the Transition from the Conjunctive to Connective Mode of Social Communication* (Helsinki: Aalto Publications, 2014), 133 and 155.

⁸⁹ Watson, "An Attempted Formulation of the Scope of Behavior Psychology," 329.

⁹⁰ It is widely predicted that "[by] 2027, a quarter of Fortune 20 companies will be supplanted by companies that neuromine and influence subconscious behavior at scale." See, for example, <https://www.gartner.com/en/newsroom/press-releases/2021-10-19-gartner-unveils-top-predictions-for-it-organizations-and-users-in-2022-and-beyond>.

⁹¹ Buckley, *Mechanical Man*, 69.

⁹² David W. Noble, *The Paradox of Progressive Thought* (Minneapolis: University of Minnesota Press, 1967/1958).

**CYBERNETICS:
FROM GUIDANCE SYSTEMS TO PSYCHIATRY, SETTING THE
FOUNDATION FOR CONTROLLING MODERN PUBLICS**

Up to the Twentieth Century, reality was everything humans could touch, smell, see, and hear. Since the initial publication of the chart of the electromagnetic spectrum, humans have learned that what they can touch, smell, see, and hear is less than one-millionth of reality. Ninety-nine percent of all that is going to affect our tomorrows is being developed by humans using instruments and working in ranges of reality that are nonhumanly sensible. —R. Buckminster Fuller¹

You have never understood your machines! —Filippo Tommaso Marinetti²

Plastic Paradigms for Plastic Times

Cybernetics is persistently apprehended as a technopolitical apparatus of the “Dark Enlightenment,” which is not constituted by progressive ideals but is rather a series of opportunities to test, weaponize, and optimize dehumanizing forms of existence and destructive forces for mass extinction. Accelerationist Nick Land describes the Dark Enlightenment as the negative exposure of democracy as really, not ideals but an appetite for becoming a more powerful, destructive form of libertarian fascism: “the democratic virus burns through society, painstakingly accumulated habits and attitudes of forward-thinking, prudential, human and industrial investment are replaced by a sterile, orgiastic consumerism, financial incontinence, and a ‘reality television’ political circus. Tomorrow might belong to the other team, so it’s best to eat it all now.” The Dark Enlightenment, Land stresses, is not a static state or an event, it is a “cybernetically intense” process.”³ This chapter will explore such *cybernetically intense processes*, traversing the disciplinary Progressive era, the cybernetic era, and the explosive present of plastic publics.

The discourse of cybernetics in the United States tends to emphasize its wartime role in the rapid, superhuman growth of the US media-military-industrial complex and automation in mid-twentieth-century capitalism; this chapter will lean into that discourse. In this US-centric narrative,

cybernetics originates with MIT mathematics professor Norbert Wiener in his work on the development of anti-aircraft guns during World War II, specifically with his attempts to improve their accuracy. This project, like the atomic bomb, was funded and organized by Vannevar Bush's academic-industrial-military "iron triangle." It continued after the war with the prospect of the Cold War and its constant threats of nuclear and ideological annihilation.

In 1944, Wiener assembled a group of scientists and engineers to discuss the need to develop a transdisciplinary approach to the "essential unity of the set of problems centering about communication, control, and statistical mechanics, whether in the machine or in living tissue."⁴ From his collaborations with neurophysiologists working on the feedback principle at the same time,⁵ Wiener developed an understanding that the feedback principle of informed communication exhibited by self-regulating mechanisms is a key feature of life forms from the simplest multicellular organisms to the most complex animals. Wiener proposes that the world in its entirety should be understood in terms of information, and moreover in terms of *information systems*.

In 1947, Norbert Wiener writes: "we have decided to call the entire field of control and communication theory, whether in the machine or in the animal, by the name Cybernetics, which we form from the Greek [word for] steersman."⁶ Cybernetics denotes not only the steersman (noun), but also the act of steering (verb), or more specifically the art or science of steersmanship.⁷ Its etymology indicates a *techné* of command, or control. As Wiener acknowledges in *The Human Use of Human Beings* (1954/1950), the term cybernetics was first used by Plato for steering a ship [*Kybernetes*], then by Aristotle for steering a community [*Kybernetike tekhné*] and centuries later, in 1834, by French physicist Andre-Marié Ampère for steering a government [*cybernétique*].⁸ Cybernetic theories for steering mid-twentieth-century publics emerged with wartime technologies and the technocracies and ideologies that created and fostered these technologies, mutating with them. The "first-order" cybernetic model is generally understood as focused on optimizing prediction and control of informational relations between goal-directed, intelligent systems. Richard Barbrook describes this origin story as "the right-wing version of cybernetics."⁹ This version is usually associated with Wiener and John von Neumann, "the war," "the bomb," and the postwar development of automated industrial technologies and new industrial relations, and the advancement of a new "science of communication."

Cybernetics was conceptualized as an all-encompassing systems theory and meta-discipline of communication and control—a form of governance inclusive of organic, technical, and social systems: animals and machines, the environment, capitalism, etc.¹⁰ Key cybernetic principles are prediction, communication, control, and *learning* by means of recursive feedback loops, individual and collective, recombining and reinforcing each other. Feedback operates in a way that is similar to proprioception—it provides a constant sense of where the subject is and how it relates to other parts of the system and its environment. So long as feedback is present, the subject will learn. If you cut feedback out of the equation, there is no learning. By extension, any system that operates by feedback is a *learning system*.¹¹

This new communications framework “offered a whole new way of looking at the ubiquitous communication and control processes, carried out, to varying degrees, by intelligent machines, human beings, and all living things and that each of those remarkable entities achieved their goals through *purposeful action governed by negative feedback and the logic of circular causality*.”¹² It occurred in tandem with discoveries in neurophysiology and psychiatry (e.g., William Penfield and Donald Hebb at the Montreal Neurologic Institute; William Grey Walter at the Burden Neurological Institute in Bristol; Gregory Bateson and the Palo Alto Harvard-MIT group; Donald Ewen Cameron at the Allan Memorial Institute) that demonstrated how human sensations correlate with electrical data via feedback between brains and EEGs.¹³ Experiments conducted on human subjects at the time also revealed the extent to which the nervous system—in particular, the traumatized brain maladapted by industrial rhythms, fissured by war, suffering from dysregulating stress—provided for “the successful penetration of the cybernetic vision of the world” into social life and social compositions.¹⁴

In his introduction to *Cybernetics: or Control and Communication in the Animal and the Machine* (1948), Wiener reveals that his ideas about cybernetics grew out of this assembling of a group of scientists to talk about transdisciplinarity and changing paradigms in scientific methodology—the Philosophy of Science Club, an interdisciplinary seminar on scientific method organized by neurophysiologist Dr. Arturo Rosenblueth.¹⁵ Methodologically, Wiener argues, cybernetics presented the prospect of the rigidly subdivided scientific field opening up to transdisciplinary teams of researchers collaborating, working together on common problems,

incubating spaces for more social and technical experimentation. Wiener expressed hope, desire, and a strong belief in transdisciplinary collaboration as creative “boundary regions” between disciplines. “For many years Dr. Rosenblueth and I had shared the conviction that the most fruitful areas for the growth of the sciences were those which had been neglected as a no-man’s land between the various established fields . . . such as cybernetics.” Cybernetics created a framework for studying communication and control systems that spread across multiple entities and focused the boundary spaces between them. The first of these studied, and perhaps the defining case of cybernetics, was the subject of the WWII research project on which Wiener worked: the system of a bomber, an anti-aircraft gun, and the human operators of each.

In this chapter, and throughout this dissertation, feedback is discussed in relation to different forms of power over bodies and subjectivities and in terms of “microrelations” (Tarde via Deleuze), social imitations and inventions that in turn constitute the visual and articulable, what we know of the world. These relations of forces (power) are characterized by “immanence of field without transcendent unification, continuity of line without global centralization, and contiguity of parts without distinct totalization: it is a social space.”¹⁶ Society never functions to represent an existing world of power relations but feedbacks with, mutates, and produces a new kind of environmental reality. Wiener warned that scientists, engineers, and society would have to practice an “imaginative forward glance” at new cybernetic technologies and, at the unregulated, under-anticipated, and incomprehensible human misuse of human beings they allow. What I call the “new business of anticontrol” concentrates on feedback processes shaping societies of incontinence from “social life that has been pulverized in the metropolitan, post-political, deterritorialized space.”¹⁷ This chapter discusses not just cybernetics, but instances where cybernetic technologies intersect in very direct ways with mid-twentieth century psychologies and the “general intelligence,” producing social mutations. Whereas in disciplinary societies it was possible to form masses of opposition, in control societies, competition is so divisive that individuals are not only set against one another but also against aspects of themselves. In plastic publics, this divisive tactic extends from the social regime to the configuration of what Berardi refers to as “the new psychopathological regime” in the intimate sphere of desire, emotion, fear. Networked

communicative technologies have been mobilized to make connections at this previously inaccessible neural level, and all are connected by cybernetic principles of feedback.

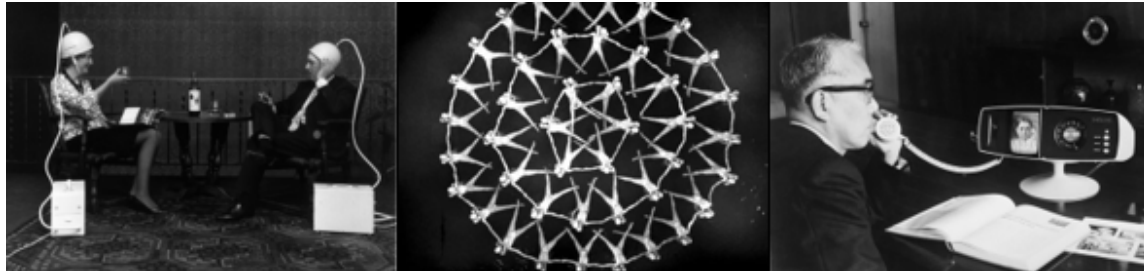


Figure 7.1. New networked configurations emerge in popular media forms as communication networks take shape, c. 1930s–1960s.

Functional Atavism: The Human Use of Human Feedback

We can be humble and live a good life with the aid of the machines, or we can be arrogant and die. —Norbert Wiener, “The Machine Age” (1949)¹⁸

Described in operational terms, cybernetics is an ontogenetic process (of dynamic, adaptive relations) that is part of all living things and every functioning system, including the human nervous system and other regulatory systems. Feedback processes organize the body’s autonomic functions, and also the dynamic, adaptive relations and patterns that shape large social groups, like publics. Neurons, like people, never function in isolation.¹⁹ Neural circuits are feedback loops involved in reward, motivation, aggression, feeding, fear, and anxiety. Bodies rely on feedback systems for self-regulation via processes of homeostasis, allostasis, and adaptation.²⁰ Communities rely on feedback to organize, resist, adapt. Anything that requires self-organization has an adaptive feedback system. Historian Otto Mayr, author of *The Origins of Feedback Control* (1970), attributes eighteenth-century economic thought and emerging industrial technologies for the origin of the feedback relation as a purposeful model. Feedback can be found at the core of several prominent eighteenth-century theories: Thomas Malthus’ population theory; Charles Darwin’s theory of evolution; Adam Smith’s “free market”; even Marx can be read as an early systems theorist for highlighting the feedback processes between technological development and human social organization. Feedback is integrative and endogenous; nothing exists outside this relation.

According to cybernetic theories, feedback governs the “intelligent” (learning) self-regulating processes of communication and control in animals and machines. At its most basic level, feedback is present in bodies as thermostasis (the regulation of temperature), hormone output, digestion, nutrition. The vasomotor nerves regulate the rate of blood flow in different parts of the body, the liver regulates blood sugar levels, even and regular respiration keeps our entire bodies in equilibrium. Feedback gives our biological bodies some degree of freedom from environmental pressures,²¹ but at the same time, can be weaponized for control: as psychological torture (e.g., isolation, sensory deprivation, sensory overload, sleep deprivation, temporal disorientation) psychophysiological torture (e.g., thermal, stress positions), as psychosocial (e.g., public humiliation, sexual degradation) and other tortures.²² As Wiener argued at the time, “This matter of social feedback is of very great sociological and anthropological interest.”²³

Feedback is the plastic capacity for not only individual entities to adapt but to affect systems-wide transformation, which accounts for Wiener’s concern with regards to its application to human subjectivity. In his studies of the wartime pilot’s behaviors and roles for the development of the anti-aircraft (AA) predictor, Wiener determined that “humans acting under stress tend to perform repetitively and therefore predictably.” He theorized that this “tense concatenation of human and machine” could be recreated in the laboratory.²⁴ Wiener developed this concept into “cybernetics,” and his concerns about the use of this concept on humans (cybernetic thinking about digital communication as a disembodied activity as opposed to embedded in specific material conditions) he termed “cybernation.”²⁵

Cybernation is the multitude of hidden processes that concentrate attention, condition it, and steer everyday life’s connective rhythms toward automation. Wiener took great interest (along with William Grey Walter and William S. Burroughs) in alpha rhythms produced within brains and their governance at the level of millions of interacting cortical neurons—by which everything comes to be absorbed into the cybernetic paradigm and from which a new regime of sensibility emerges, one modeled on the dynamic microrelations informing the anti-aircraft predictor. Peter Galison describes “the vast array of human proprioceptive and electrophysiological feedback systems”²⁶ made visible by this understanding of the interconnection between the minds of enemy

pilots-navigators-bombers, those of anti-aircraft gunners, their increasingly automated weaponry, and the perception management and affectual mobilization of war machines in everyday life.

In *The Human Use of Human Beings*, Wiener describes cybernetics as taking the view that “the structure of the machine or of the organism is an index of the performance that may be expected from it.”²⁷ He uses a political allegory of ants and humans to illustrate this. Perhaps this work was influential to Harvard social biologist E.O. Wilson (*Sociobiology*, 1975), who studied the social organization of ants—specifically their prosocial, cooperative organization—and famously quipped, “Karl Marx was right, *socialism* works, it is just that he had the wrong species.”²⁸ According to Wilson, the ant world is the commune, where all is cooperative, nothing is property, everything is equitable, everything exists in harmony. On the contrary, Wiener argues instead that ants are natural-born fascists because their exoskeleton prohibits growth and change. Their social and political nature is molded by their inhibited potential to do anything other than the highly specialized skill their physiology predetermines them for: “rulers are perpetually rulers, soldiers perpetually soldiers, the peasant is never more than a peasant, and the worker is doomed to be a worker.”²⁹ Ants are “conditioned from birth” to act as one, work as one, survive as one. Like with Babbage’s machines, there is one and one and one and one and one. That is all. He continues: “The physical strait jacket in which an insect grows up is directly responsible for the mental strait jacket which regulates its pattern of behavior.”³⁰ Similarly, arthropods are delimited by “the straitjacket” of their external skeletons, and mollusks by their shells. In contrast, human skeletons grow and change with the individual over time. Humans operate with “mechanical fluidity” owing to the complexity of the nervous system, and its capacities for learning and “almost indefinite intellectual expansion.”³¹

In the concatenation of cybernetics and society, Wiener expressed growing concern that what was developing was an “emergency-minded public” so consumed with tackling the perceived threats immediately at hand—from total nuclear devastation to secret threats lurking around every dark corner in the post-World War II years—“it was prepared to sacrifice long-time ends and ideals”³² with regards to learning, understanding, consciousness, ontology. Wiener’s concern about cybernation’s potential harms included humans’ overreliance on automation, resulting in the incapacity to sense and act upon or in harmony with systems:

We have modified our environment so radically that *we must now modify ourselves* in order to exist in this new environment. We can no longer live in the old one. Progress imposes not only new possibilities for the future but new restrictions. It seems almost as if progress itself and our fight against the increase in entropy intrinsically must end in the downhill path from which we are trying to escape. Yet this pessimistic sentiment is only conditional upon our blindness and inactivity. . . . May we have the courage to face the eventual doom of our civilization as we have the courage to face the certainty of our own personal doom. The simple faith in progress is not a conviction belonging to strength, but one belonging to acquiescence and hence to weakness.³³

Wiener distinguished his perspective on cybernetics' use from second-generation or “second order” cybernetics, involving the milieu of ecological thinkers like Bateson et al., by maintaining the argument that “the master’s tools will never dismantle the master’s house.”³⁴ Wiener was also critical of what he considered Bateson and Mead’s “bioanthropologizing” of cybernetics, a process Tiqqun refers to in *The Cybernetic Hypothesis* as an *anthropotechnics* typical of second-order cybernetics—its normalization of human experimentation—of human use of humans for scientific research.³⁵ Consider the various ways cybernetics manifested in generalized forms during the postwar years (as displacement of human intelligence by machine intelligence): the automation of information and statistics (from mail sorting to data governance automation), cognitive and computational paradigms for future social networks (e.g., the reinforcement learning model of B.F. Skinner’s “Skinner Box” is often regarded as the key model for social media and key factor in social media addiction), “suburbs” and “living rooms” built in anticipation of “baby boomers” (social engineering).



Figure 7.2. Switchboard – Suburbs – Shopping: Surveillance Capitalism.

Cybernetic historian Steven J. Heims remarked that what most impressed him upon first reading Wiener's *Cybernetics* as a student was its unprecedented combination of original biological, mathematical, and technological ideas and inventions presented with an intense caution for the likely social and political misapplications of this work.³⁶ Nevertheless, for some reason—perhaps only reading his first book, *Cybernetics*, or misreading his book *The Human Use of Human Beings*, or reading the revised 1954 or 1989 edition rather than the now-rare 1950 first edition, or purposive use that overdetermines information that doesn't suit its needs³⁷—Wiener is often rendered by critics of cybernetic culture as its official architect and as a dangerously ambitious technocrat oblivious or apathetic to the potential dangers of cybernetics on society.³⁸

Nevertheless, Wiener's apprehension of cybernetics as an ethics problem based on, or emerging from, the relation between cybernetic informational machines and society, his distrust of power (of oppressive governments, profit-oriented corporations, and the military sectors of society), the technological control of society, the environment, the future, and his acknowledgement that cybernetics was the starting point of a new, "ever more demanding" form of capitalism are consistently expressed in his texts:

[I]n the fall of 1944 a complex of events took place which had a very considerable effect on my later career and thought. I had already begun to reflect on the relation between the high-speed computing machine and the automatic factory. . . . I wondered whether I had not got into a moral situation in which my first duty might be to speak to others concerning material which could be socially harmful.³⁹

[T]he automatic machine, whatever we think of any feelings it may have or may not have, is the precise economic equivalent of slave labor. Any labor which competes with slave labor must accept the economic conditions of slave labor.⁴⁰

The world of the future will be an ever more demanding struggle against the limitations of our intelligence, not a comfortable hammock in which we can lie down to be waited upon by our robot slaves.⁴¹

In one of his final books, *God and Golem, Inc.* (1964), Wiener discusses the internalization of economic, social, and informational flows that cybernetic systems rely on to enhance and augment the automation of power through influence. He describes an emerging class of "gadget

worshippers” who cannot understand their increasingly interactive machines but will respond to instructions on how to act or behave with them:

In addition to the motive which the gadget worshipper finds for his admiration of the machine in its freedom from the human limitations of speed and accuracy, there is one motive which is harder to establish in any concrete case, but which may play a very considerable role nonetheless. It is the desire to avoid the personal responsibility for a dangerous or disastrous decision by placing the responsibility elsewhere: on chance, on human superiors and their policies which one cannot question, or on a mechanical device which one cannot fully understand but which has presumed objectivity.⁴²

Wiener warns his readers of the dangers of *golem*, a term from Jewish folklore that describes the danger of human-made automatons that once switched on cannot be switched off. It is similar message to William Burroughs’, who cautions his readers in *Naked Lunch* (1959) about the new cybernetic societies of control: “You see control can never be a means to any practical end. . . . It can never be a means to anything but more control. . . . Like Junk.”⁴³ Like Burroughs, Wiener is taking stock of cybernetics as a new reflexive conception of force that affects the surface of culture—its aesthetics, institutions, behaviors, and biases—while at the same time transforming deeper realms of biology, subjectivity, and the body’s chemical and molecular signaling systems at levels beyond human cognition and consciousness.

In *The Human Use of Human Beings*, Wiener writes: “Those who suffer from a power complex find the mechanization of man a simple way to realize their ambitions.”⁴⁴ In the polarizing atmosphere of Cold War US politics, Wiener’s criticism of the potential misuse of cybernetics on human operating systems was apprehended as a political threat to the US’ anticommunist project and its cultural hegemony. In 1952, Wiener was informed he was under FBI investigation—the agency at the time was operating under the administration of Harry S. Truman and Richard Nixon—for possibly working for the Soviet Union. He was warned that he would be called before the House Un-American Activities Committee (HUAC) to testify on his research and work in cybernetics.⁴⁵ His criticism of cybernetics’ potential misuse—particularly with regards to the future of automation and its impact on publics as well as for steering interconnected nervous systems—was deemed too similar to the Soviet view that cybernetics was destined to replace the proletariat with machines.⁴⁶ This characterization of Wiener as a warlord and then as enemy of the

state, and the functional silencing or marginalization of his antiwar writing (most of it was unpublished), has well served the US government's efforts to advance a particular narrative of cybernetics that is largely unchallenged.

Wiener's concern about the misuse of feedback and machine intelligence—that a machine can learn from its own experience and improve its own performance in ways perhaps unforeseeable to their human counterparts—is clear, consistent, and more aligned with countercultural criticism of cybernetic social controls than with the scientific or militaristic goals and technocratic ideals of progress his name became synonymous with.⁴⁷ In Wiener's final book, *Cybernetics of the Nervous System*, co-edited with J.P. Schadé and published posthumously, the scientist is remembered for his contribution to understanding the rhythmic phenomena of feedback; that in the natural world there exist a multitude of rhythmic phenomena working together: it is a "pooling-effect" of mutual participation. In this final work, he expresses an uncharacteristic optimism for the future of humanity, despite his concerns with destructive developments like the H-bomb (which he refused to work on for ethical reasons) and automation. In appeals to other scientists, Wiener advises that with "clear scientific understanding and the right amount of imagination, people could become productive together in a *rhythm* of mutual participation. . . . But of course, this was Wiener's whole point, this mutual working together":

As he continued into cybernetics, the ramifications of his thoughts into the biological sciences brought him to a growing awareness of the social implications to his work. He became concerned with the impact of automation on industry, and began consulting with labor leaders to bring about better understanding of it with them.

He held regular study-groups in neurocybernetics. A complete account of Dr. Wiener's work is not possible at present, for a great portion of that work continues to exist in the present, and will continue into the future. Only in the future will there be the complete resolution to all the things Wiener participated in and contributed to. Wiener's long scientific career is a model of creativity. He participated best in the quiet small study group, where the brew of coffee and ideas went together.⁴⁸

Ultimately, however, when Wiener died in March 1964, his obituary in *The New York Times* described him as “the father of automation”⁴⁹ and this, by and large, is how he continues to be remembered.

From Behaviorism to Cybernetics: Piloting New Human Behaviors through Feedback

Looking back to Chapter 6, “A Classical Behaviorist Twist to Social Control,” we can see neurocybernetic principles of entrainment and self-entrainment via feedback put to work on the governance and the shaping of the capitalist subjectivity. Frederick Winslow Taylor’s scientific management and John Broadus Watson’s behaviorism provided techniques to standardize the behaviors of individuals, to render social activity observable and normative, to program group interactions in the image of the industrial model of productivity. The Organization Man, the Authoritarian Personality, the Man in the Grey Flannel Suit—well-known archetypes of the 1950s conservative, conformist, “buttoned-down, psychologically fragmented”⁵⁰ businessman as somewhat inhuman archetype—all possess the same bureaucratic constitution. They all assume a principled stability and placidity about the status quo they are tasked with upholding. In sum, this bureaucrat subjectivity is aggressively slow and hostile to anything it considers disruptive, while at the same time, the success of the bureaucratic program requires it to keep modulating with the system it inhabits more rapidly and intensively.

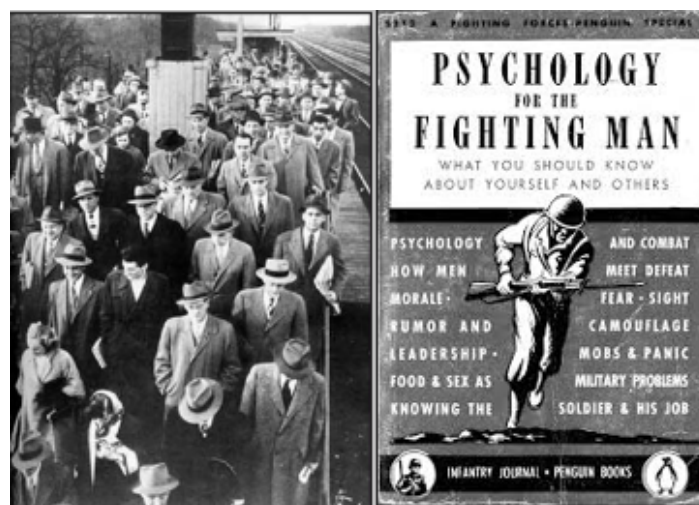


Figure 7.3. Postwar earning machines.

In Sloan Wilson's novel *The Man in the Grey Flannel Suit* (1955), this exact kind of social actor is depicted as being able to confront struggles and manage stress with an indifferent exhortation: "It just doesn't matter." The book's protagonist, a veteran WWII paratrooper, uses this refrain throughout the war whenever parachuting from a plane or killing an enemy soldier, and he becomes increasingly aware that this applies to his everyday life in postwar corporate America, a role he initially refuses. Consumption and depletion of self into discontentment are described as the inevitability of modern life: "Tom [Rath] and Betsy lived in a small house they hated in a suburb they disliked. Their chief preoccupation was the money they needed for all the things they wanted to do; their wartime dreams of the happy life they would enjoy in peace seemed to have become lost in a bewildering maze of anxieties."⁵¹ Put in terms of plasticity and cybernetics, the interactive formative and transformative space of the self's reproduction of the self to itself becomes less oriented to self-governing and more amenable to automation. Locked in feedback loops of anxiety and desire, subjectivity becomes detached, retreats, loses touch with reality and power.

As Wiener argues in "A Scientist Rebels," which first appeared as an article in popular journal *The Atlantic* in January 1947, postwar publics were "emergency-minded," with underdiagnosed psychic traumas resulting from the world wars and hypersensitivity to the constant threat of another world war.⁵² A new kind of "cold" war emerged that targeted its own subjects' fears, anxieties, and feelings of powerlessness by equating American life under Communism with global nuclear annihilation. Attempts to pave over the contagion of postwar PTSD with consumption, television, suburbs, highways, and airports for international travel simply did not do enough, or anything at all, to ameliorate public mental health.⁵³

What can the traumatized brain do?

This idea of the traumatized public inhabits neurologist George Beard's definition of "neurasthenia" and how it manifests in late-nineteenth-century America as "a national tendency to nervous rush" or "Americanitis." In an 1869 article for *The Boston Medical and Surgical Journal*, Beard describes it as a mechanical failure or "weakness of the nerves" widespread enough to

appear as *a culture of nervous exhaustion*. Neurasthenia was also referred to as the “American disease” and “American Nervousness.”⁵⁴ William James, who was diagnosed with it, popularized the nickname “Americanitis” for the inflammatory, mentally and physically exhausting condition of living in acquisitive, capitalist, anxious modern society, its social relations and mores, and the consequent depletion that their maintenance entails.⁵⁵

John Girdner’s book *Newyorkitis* (1901) expresses particular concern about the extent to which “New Yorkers are *driving themselves* and *being driven* . . . working like dynamos all day, playing like idiots at night.”⁵⁶ According to Girdner, “one of the most pronounced symptoms of Newyorkitis is a circumscribed mental horizon. The patient thinks in a circle bounded by the confines of Manhattan Island,” and they are too submerged in the city life to understand they are infected with the commutable disease of neurasthenia. Locked in mutually reinforcing feedback loops of desires and anxieties, this crisis in self-management played out at a new mass scale, which courted the rational management of new technocratic systems for the management of not just individuals but increasingly for the “global” brain activity of publics.

In the early twentieth century, behaviorism normalized management systems and systems-thinking as tools for self-governance; that is, as skills needed by individuals to function within larger networks of self-regulating systems. Yet, beneath the veneer of an authoritarian conformity and cultural sameness are changes in the internal organization of habits, what Margaret Mead referred to as “the cybernetics of cybernetics,” the self that self-organizes to maintain stability/homeostasis and balances that with change and transformation. Importantly, it reorients the subject position of the observer as part of the process and not external to it, a participant and active part of a larger maladaptive ecology.⁵⁷ With Watson, the behaviorist project of technocratic control was not so much to instill a particular way of thinking or worldview as to install scientific management within a collective subjectivity. Learning itself became subject to observation and feedback. Behaviorism paved the way for cybernetics as “a science of learning processes.”⁵⁸



Figure 7.4. Ads for Rexall's Americanitis Elixir framed by streets of New York City, c. 1901.

Perfectly integrated subjects

Since the time the serpent in the garden of Eden influenced Eve and Eve in turn persuaded Adam, the world has tried to find out ways and means of controlling human behavior. In advertising, we call the process *selling*. —John B. Watson⁵⁹

Technologies for controlling and modulating *affect*, for amplifying public affects, and retraining the rational Enlightenment subject “*homo economicus*” for functional adaptability emerged during the Industrial Era, along with new ways to connect via networks of communication technologies, new ways of managing and channeling information, and new ways of influencing and anticipating the behavior of groups via the observation and conditioning of habits:

While habit in Darwin, James, and Butler offered possibilities for a creative transformation of the Self, an opening of the human to profound interconnection with all other organic and inorganic forces and a recognition that the organizing Self was nothing but a habit regulating a collection of habits, Watson's behaviorist psychology used these same principles (including habit as a force of forgetting) to reconfigure the body as something produced by and responsive to flows of capital and desire.

“Habit,” Jodie Nicotra underscores in her brilliant dissertation *The Force of Habit: Rhetoric, Repetition, and Identity from Darwin to Drugs* (2005), “at least as it operates in classical behaviorism, is really the foundation of capitalist subjectivity.”⁶⁰ More pointedly, Watson helped to create the *conditions of subjectivity* necessary for cybernetic capitalism: a new informational subject, attentive, sensitive, and responsive to pressures and coercions in the new, tactical space of communication. As Tony Sampson discusses—in context his work on neurofeedback and

“specialized control” in *Virality*—there’s “a general and political relation established between the sensory environments of capital and certain brain-somatic states. I think these relations are crucial to understanding the paradoxical and dystopian nature of neurocapitalism.”⁶¹

Watson’s later experimental work as a behaviorist, specifically his work with human infants as of 1916, led him to believe that at birth, humans possessed a limited inventory of basic reactions, or emotions: love, fear, and rage. Everything else were psychopathologies shaped through experience and feedback with the environment and its principal agent of entropic destruction: the mother. In *Psychological Care of Infant and Child* (1928), he criticizes the lack of scientific attention given to parenting, asserts the need for scientific methods for parenting which he will provide, and censures parental affection for its role in ruining potentially good workers. In discussing the need to correct current norms of parental affection, Watson warns his readers: “to the extent to which you devote time to petting and coddling—and I have seen almost all of a child’s waking hours devoted to it—just to that extent do you rob the child of the time which he should be devoting to the manipulation of his universe, acquiring a technique with fingers, hands, and arms.”⁶² Around this time, Watson began imagining and drafting plans for a behaviorist utopia, which Nicotra describes as comprising neurotic levels of surveillance, misogyny, eugenics, and control over life and death,⁶³ which would be exclusively administered by physicians and psychologists trained in the behaviorist experimental method.⁶⁴

In behaviorist fashion, Watson argues children are made, not born: “Above all, we have tried *to create* a problem-solving child.”⁶⁵ Watson viewed emotions as “pattern reactions”—explicit, observable patterns that could be studied, and from that, learning could be conceptualized as a process of forming associative connections between stimuli and responses.⁶⁶ Using conditioning to modify human emotional behavior, “to gain experimental control over the whole range of emotional reactions,” the complex systems of habit people form in response to their “natural environment,” and to retrain them to “fit in successfully with the needs of the organization and the corporate society it served.”⁶⁷

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situation. Naturally we have had to give the child customary manners and to build up conventions in him, and to give him a daily personal routine, since he must have such habits if his guts (emotional equipment) are to give him time to do anything else.

Above all, we have tried to create a problem-solving child. We believe that a problem-solving technique (which can be trained) plus boundless absorption in activity (which can also be trained) are behaviouristic factors which have worked in many civilizations of the past, and which, so far as we can judge, will work equally well in most types of civilizations that are likely to confront us in the future.



Figure 7.5. Excerpt from J.B. Watson, *Psychological Care of Infant and Child* (1928); baby in classic behaviorist observatorium.

People raised in Watson's behaviorist utopia are good workers, free of "emotional dependency," who possess "a readiness to respond to a difficulty and complex environmental setting in a variety of different ways."⁶⁸ In the event that his behaviorist utopia could be built, Watson imagined an experimental "baby farm" for the emotional and social conditioning of subjects that could start at birth—why waste time and resources retraining adult subjects when *perfectly integrated subjects* could be trained and regulated in the first few months of the infant's life?⁶⁹ According to Watson, such a process was already present in how most human fears were acquired: a child learns to associate previously neutral stimuli with painful or alarming events in their natural environment. In a lecture conducted in the mid-1920s, Watson described conditioning behaviorist children as one of his experimental goals:

I hope some time to try out the experiment of having a tabletop electrically wired in such a way that if a child reaches for a glass or a delicate vase it will be punished, whereas if it reaches for its toys or other things it is allowed to play with, it can get them without being electrically shocked. *In other words, I should like to make the objects and situations of life build in their own negative reactions.*⁷⁰

In a June 1920 letter to Johns Hopkins University President Frank J. Goodnow, his employer, Watson announced: "I shall never be satisfied until I have a laboratory in which I can bring up

children from birth to three or four years of age under constant observation.”⁷¹ He viewed behaviorism as necessary for updating *the form of social control*—which he also recognized as life-long processes of plastic change—and believed this work to be “handicapped because there are no facilities in maternity wards for keeping the mother and child under close observation for years, a condition which is indispensable for real systematic work.”⁷²

Later that summer, the National Research Council approved funding for a children’s hospital Watson had proposed, which would include his infant laboratory. Watson’s experimental conditioning on human infants included the infamous use of nine-month-old Albert B. to test the capacity to scientifically produce a perfectly integrated individual.⁷³ This experiment was in fact his final research project at Johns Hopkins. Best known as “the Little Albert experiment” or “Albert B. Study,” its formal title is “Conditioned Emotional Responses” (Watson and Rayner 1920).

Watson’s main experimental goal with the study was to make human learning and thereby what people do more efficient and easier to control. He found subjects who learned to regulate themselves were more well-adjusted, or “better integrated” into their environment. In his reports and articles on childrearing for popular magazines such as *Parents* and *Cosmopolitan*, Watson expressed regret about not providing his own children with a “consistent-enough” environment that constant, detached observation and conditioning in the laboratory would have provided for them.⁷⁴ Watson documented how he raised his own children according to behaviorist principles. These involved: strictly scheduled feeding times; no physical affection (recall, for Watson, maternal love is presented as “an instrument which may inflict a never-healing wound”⁷⁵); maintenance of a relationship that is “objective and kindly firm”⁷⁶; and giving the children as much independence as possible, i.e., put them out in the yard on their own, observing their behavior from a distance (“make yourself a peep-hole so that you can see it [the child] without being seen, or use a periscope”⁷⁷). Of Watson’s four children raised in accordance with his patented behaviorist childrearing method: one committed suicide, one repeatedly attempted suicide, and two had chronic stress-related gastroenterological disorders, one of which resulted in early death from bleeding ulcers.⁷⁸

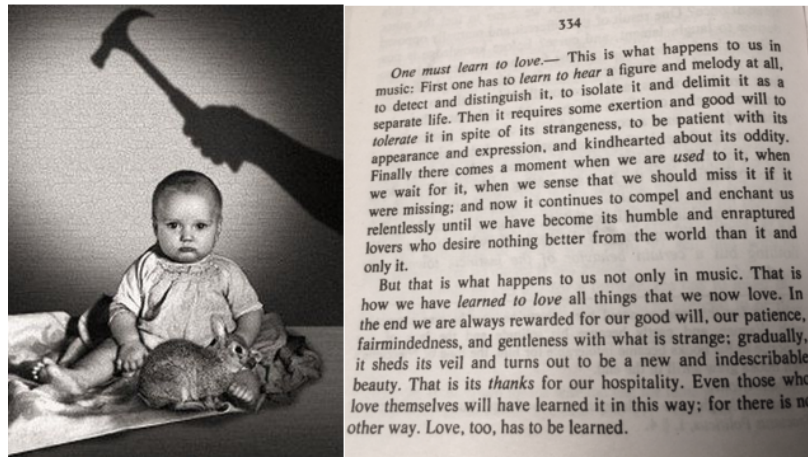


Figure 7.6. “Children are made not born.”⁷⁹

Watson’s baby farm was never built and his infant laboratory was never permanently installed in the pediatric care units of hospitals everywhere, yet his extreme behaviorist views endure. The idea that people could not be trusted to behave themselves without being observed in a highly controlled environment—such as the current global surveillance or “world panopticon”—or their behavior being administrated, trained, conditioned, and reconditioned by scientific experts was greatly amplified by his post-academic career—first as a psychological consultant, then as Vice President of the world’s largest advertising agency at the time, J. Walter Thompson. The agency, which had already established itself as a pioneer of marketing research techniques and publicly expressed its commitment to finding “scientific solutions to marketing problems” and innovating the science of branding was a perfect fit for Watson.⁸⁰

During his tenure at J. Walter Thompson, Watson piloted psychological campaigns that targeted consumers’ emotions: “tell him something that will tie him up with *fear*, something that will stir up a mild *rage*, that will call out an affectionate or *love* response, or strike at a deep psychological habit or need.”⁸¹ For example, in a campaign for Johnson & Johnson baby powder, Watson identified his target market: young, white, affluent women. To condition their behavior and transform them into obedient, loyal consumers of this product, Watson’s campaign emphasized the dangers of infection to infants, and preyed upon the well-appointed good mother’s desire for status/place in the world with reassurance provided by the brand: “Best for Baby—Best for You.” Watson used social and behavioral science to align human behavior (consumption of a

brand) with “scientific standards” and “expert knowledge” and to stimulate responsiveness to the “virtues” and “powers” conveyed by this medically vouched-for product:

Watson hoped to stimulate an anxiety or fear response on the part of the young mothers by creating doubts as to their competence in dealing with questions of infant hygiene. Watson reinforced the implications of his message with the use of testimony by medical experts. This served the dual purpose of testifying to the ‘scientific’ standards of the product as well as appropriating authority on infant care and hygiene from the family to ‘experts.’⁸²

Watson revolutionized marketing by his insight that what advertising was selling was not products, but rather, it was driving ideas, ideals, and desires for self-optimization that had to be able to be mobilized and socially reproduced in feedback with the accelerating speed and mobility of production. For example, a Watson-designed campaign for Pebecco toothpaste probed his female audience’s desire to be loved and considered attractive along with their fears of rejection and not measuring up to cultural standards of dental desirability: “white teeth”; “shining teeth and a fresh sweet mouth”; “whiteness”; “the sweet, inviting mouth of youth.” Another one of Watson’s Pebecco ads targeting women asks in its headline: “Do you want your teeth . . . *to get ugly?*” And in two other Watson-directed, negative, accusatory ads, the headlines scream: “How in the world did you ever let your teeth get in that condition?”; and “ONLY ONE WAY to keep teeth both white and safe.” Invoking an aspirational and transformative identity narrative approach, in one of the ads pictured below, the headline plaintively reads: “Who could love a girl with smoke-stained teeth?” Watson’s behaviorist approach exposed the true power of branding to arouse visceral miscegenetic feelings and emotions in individuals and groups of consumers in such ways as to ascertain, activate, and condition their behavior in the market.

One of Watson’s most frequently cited experiments at J. Walter Thompson involved the blind-testing of cigarette brands, including the smokers’ individual favorites. The results were surprising for researchers at the time, in that subjects were less able to identify their favorite brand by its unique flavor, but rather were influenced by feelings and emotions the brand aroused in them. Effectively, it marked the discovery of the power of persuasion to work upon the subject at a “precognitive” or affective level, which we know now occurs even at the structural, neuroplastic level of cognition and social cognition. Contemporaneous with Edward Bernays’ “liberty sticks”/

“torches of freedom” campaign for Lucky Strikes, which exploited a social movement (the women’s liberation movement) to seduce a new target audience, Watson’s cigarette experiment reveals the overwhelming desire of early to mid-twentieth century publics, to be—as Guy Debord and his Lettrist and Situationist cohort observed several decades later—*transformed by industry*. Importantly, Watson realized that “change in our emotional equipment” was an ongoing process and thus, “since the formative period is coextensive with life, social training should be continuous throughout life.”⁸³



Figure 7.7. Several Watson-led campaigns for Pebecco toothpaste, c. early 1920s.

Watson publicized various ways his brand of behaviorist science could be applied to shape or mold a predictable, controllable, yet malleable population of consumers. In trade books and articles in popular magazines, Watson proselytized that the means for emotional self-adjustment provided by behaviorist science would make it possible for “every boy and girl by the age of fourteen to know his own organism and its reactions. . . . I think this would lead the organism to be behavioristically self-correcting—just as now the body unaided . . . heals its own wounds.”⁸⁴ This was proposed as a solution to the problem of humans being the only variable in the production and marketing process that had not yet been automated.⁸⁵ Watson’s behaviorist experiments in the “real world” of advertising are the precursors of a *flexible subjectivity* that can be affectively modulated and to some degree automatized through habit, a process disguised by its participatory design. Watson’s work in advertising introduced the commodification of the informational subject

to a new industrial scale. The informational subject was no longer the exclusive purview of the behaviorist, it became present everywhere in control societies through its application as a *cultural technique* for the technical adjustment of human behaviors.⁸⁶

Behaviorism Arcs Toward Cybernetics

For practical or theoretical reasons, dictators, organization men and certain scientists are anxious to reduce the maddening diversity of men's natures to some kind of manageable uniformity. —Aldous Huxley, *Brave New World Revisited* (1958)⁸⁷

This section highlights the rapid deployment of cybernetic thought within the fields of neurophysiology and psychology (particularly behaviorism) during and after World War II, which extended the diagnostic lens beyond the individual patient to focus on the expanded social field of new technologies and neuronal subjects created by the speeding up of communication. In a *Times* article dated June 17, 1941, British physiologist Prof. A. V. Hill, M.P., Secretary of the Royal Society, writes:

The war is one of unparalleled speed. Success depends upon rapidity of communication, and of detection and interception of the enemy. The timescale of earlier wars is no guide; science must now be as rapid in dealing with new problems as its products must be rapid in bringing the enemy to action. The essence of effective communication is speed; the essence of effective cooperation in research is speed; until frequent personal contacts and rapid communication are available, that speed will not be reached and the potential advantages of collaboration . . . will not be fully realized.⁸⁸

With professional ties to both the military and to the scientific study and the human nervous system—via biophysics and neurophysiology—Hill was uniquely situated to observe the impacts of technological change on emergent forms of communication, control, and group behavior. He was among the first to investigate anti-aircraft gunnery in the post-World War I years; he was later involved in developing apparatuses to locate aircraft by sound.⁸⁹ In 1922, he was jointly awarded the Nobel Prize for Physiology or Medicine along with Otto Meyerhof for their work in discovering the distinction between aerobic and anaerobic metabolism.⁹⁰ In 1935, during World War II, Hill served on the committee that devised radar, but his principal field was that of exercise

physiology: working on understanding the relation between physical activity and physiological adaptation.

Hill also served on the WWII Committee of Medical Research with neurophysiologist Dr. Wilder Penfield, whose collaborative work with Dr. Donald Olding Hebb on cortical stimulation during the period 1937–1939 provided a new neurophysiological model for learning-unlearning that was foundational for the conceptualization of cybernetics. Penfield was founder of the Montreal Neurologic Institute (MNI) and was a pioneer of using artificial electrical stimulation on the brain for localizing functions and for diagnostic purposes, and to some degree, for therapeutic purposes, such as with his treatment of epileptic patients.

From this work, his colleague Hebb developed his neurological explanations of behavior, which challenged theoretical psychology's reliance upon the behavioral aspects of learning (1930–1950) for diagnostics, arguing that in its focus *on the surface of things* for behavioral information it completely neglected the biological fact of learning's neural basis. In Hebb's book, *The Organization of Behavior* (1949) he developed his hypothesis of neural mechanisms (e.g., the cell assembly, a circuit of neurons firing together in response to a particular stimulus, or “neurons that fire together, wire together”). He emphasized the adaptive nature of not just behavior but mental attitudes—including heuristics and biases—at a time when the popular diagnostic was the fundamental necessity that the masses “manage to adapt themselves satisfactorily to wartime traumas.”⁹¹

Working to salve the traumatic effects of technological change gained a new prominence with the war. During World War II, the Committee of Medical Research, Subcommittee Traumatic Shock, was part of an international group (of researchers from US, Canada, UK) working to innovate new methods of group psychology. Research, experimentation, and implementation were required to keep pace with “the speed of war.” This work was often overseen by vast committees but undertaken by military psychiatric social workers (also classified as soldiers) who sought to provide “*living evidence of the men's capacity to come to grips with their own problems and come out of their psychoneurotic isolationism into a group unity in the Army.*” The approach put “*genuine responsibility on the patient to participate in his own improvement, and lifts diagnosis from the coldness of categories into the wealth of a developmental process.*” Practitioners also

argued against institutionalization and institutional settings in general for recovering patients because they inhibited feedback between patients and the rapidly changing social environment. Their therapeutic goal was to provide tools “to help men rebuild their own social qualities.”⁹²

Cybernetics and mid-twentieth-century psychology

Discourses of neurophysiology and cybernetics became mutually constitutive in the period following World War II.⁹³ British neurophysiologist William Grey Walter’s experimental work at the Burden Neurologic Institute exemplifies this. Grey Walter was among the principal pioneers in electroencephalography (EEG), a technology used to observe, record, and “read” the activity of the brain. He was responsible for the first diagnostic use of electroconvulsive therapy (ECT) in Britain in 1939 and provided the technical specifications for ECT’s development and for the first prefrontal leucotomy in Britain in 1940.⁹⁴ With respect to Grey Walter’s contribution to the field of cybernetics, Andrew Pickering argues that “if one wanted to identify the worldly matrix from which his cybernetics emerged, it would have to be psychiatry; more specifically the psychiatry of the great and desperate cures; and more specifically still the world of electroshock, electroconvulsive therapy, ECT.”⁹⁵ Grey Walter’s stroboscopic studies are repeatedly cited as a huge influence on prominent countercultural figures such as William Burroughs and Aldous Huxley, who wrote in *The Devils of Loudon* (1952), that in the future there would be “new and previously undreamed-of devices for exciting mobs” at a deep neural level.⁹⁶

In *The Living Brain* (1953)—a trade book written for a popular audience, and which is as highly subjective as it is informative on the conditions of neuroscientific discovery in mid-twentieth-century Britain—Grey Walter credits Norbert Wiener with reviving and giving additional meaning to Ampere’s *cybernétique*, which helped to establish the technological bases of a “new science of government.” The word κυβερνήτης [*kybernētēs*] was first used in the context of “the study of self-governance” by Plato in the *Alcibiades* to signify the governance of people. It also translates into “care of the self.” It’s the origin of the axiom “know thyself,” which, here as elsewhere, Socrates describes as the consciousness not of sin but of ignorance. No person knows how ignorant they are, and no person can arrive at virtue and wisdom who has not once in their life, at least, been convicted of error. The route to the good is *learning*, which can also be translated

as error detection and course correction. Grey Walter outlines how in many ways, the feedback concept originates in organic adaptation as risk assessment: “Anything that moves about increases its risks, runs into new dangers. . . . In the multicellular world, among beings of more delicate construction than the plastic single cell, there is an even higher premium on road-sense, on steersmanship. We have to visualize an elementary system of control by which the forward part of an organism can obtain information and feed it back internally for guidance of its operative nerve centres. Such feedback control was a commonplace of the physiologist long before the engineer found common ground in cybernetics.”⁹⁷

Like Wiener, Grey Walter said we must understand the brain’s activity in terms of its *collective rhythms*, which he termed “*rhythmicity*.” Grey Walter identifies rhythmicity as the basic axiom of all things: “where there is pattern, there is significance”; the brain has an “affinity to rhythm” but moreover, “The brain can learn—NO other structure can. So rare and precious is this learning, so delicate and elegant is the electric weaving we have seen [on EEGs], that to associate the two is more than tempting—it is a marriage of necessity.”⁹⁸ Neurophysiology reveals the degree to which “plasticity . . . is one of the basic principles that seem to govern animal engineering”; and “all adaptation is a function of the community, not just the individual.”⁹⁹ Grey Walter describes mid-twentieth-century neurophysiological discovery as a massive project, as complex as the brain itself, but warns that neurophysiologists are looking to create norms for pathologists and admonishes that “travel on that road [to discovery about the rhythmic complexity of the brain] must continue slowly and methodically.”¹⁰⁰

In the 1940s to early 1950s, during the war and in the immediate postwar period, neurophysiologists at the Burden Institute performed service in the form of treating soldiers with traumatic brain injuries. Working with EEGs, they were discovering the brain as “essentially the organ of personality”¹⁰¹ along with plentiful “evidence that the condition of the electrical activities—alpha, delta, and theta—are closely connected with the maturing of the personality” and thus with behavioral traits.¹⁰² Grey Walter was among the first to establish neurophysiological evidence for the electrical sensitivity of the brain—that brains do not exist in isolation but within a complex and dynamic system of mediations between social, biological, and technological

worlds—and that capacities for self-indulgence and self-control in individual subjects and groups can be measured, together with the effects of encouraging or discouraging them:

We have seen that the intricacies of learning and abstraction, the perspectives of personality and imagination, the labyrinth of original fantasy, can all be explored and charted in objective records.¹⁰³

EEGs provided technological ways for “materializing conscious life,” “revealing the electrical nature of our desires,” and mechanically modeling human’s “most profound and intimate needs and actions.”¹⁰⁴ As Rhodri Hayward argues, Grey Walter’s contribution to new knowledge about and new tools for steering publics was also rhetorical. For example, he explains to readers of *The Living Brain*: the brain is not a discrete entity, but rather is a contingent, open-ended process, observed and recognized through changing rates of behavior and “extended” by technology.¹⁰⁵ Hayward writes, “This new behavioral conception undid the idea of any natural or necessary division between the self and the world. In the act of extending the boundaries of his discipline, Walter dissolved the limits of individual subjectivity.”¹⁰⁶ Grey Walter’s EEG research is formative in the contemporary understanding of the brain as a “performative organ rather than a cognitive one—an organ that acts (here, emitting electrical signals) rather than thinks.”¹⁰⁷ New goals and potentials for a “performative brain” (what was not yet called “neuroplasticity”) arrived with this emerging technology for analyzing the brain’s activity and manipulating at a deep neural level subjects’ most intimate desires and patterns of motivation and action.

In the WWII and postwar period, these new powers were explored by neurophysiologists and psychiatrists to alter personality and govern consciousness as a learning system (“insofar as the power to learn implies the danger of breakdown”¹⁰⁸). During the war, Grey Walter worked directly with soldiers suffering from “battle fatigue” and afterwards, with returning soldiers who were traumatized or psychologically wounded by their experience of war, with the hope ECT would enable them to recover in the same way a leucotomy patient might: re-education, at the level of rhythmic electric pulses and signals in the brain, so as “to fit in better with the social pattern.”¹⁰⁹ Brain rhythms are “the wardens of brain function” and of social function by transforming the bases of human behavior.¹¹⁰

The one activity that cannot be conditioned is the brain's need to learn. Grey Walter writes, "You may learn nothing and get away with it, but you cannot in sanity learn not to learn. The mechanism breaks down, sooner or later, when these natural functions are tampered with; the mind is flattened into a shallow mould; anything can mean anything and untruth be truth."¹¹¹ Readers of *The Living Brain* are cautioned to be wary of the "borderland of the unpredictable." America is the "great incubator of synthetic cultures" or "cults," among which he counts behaviorism and "the latest of these [is] the Dianetics of Hubbard."¹¹² He concludes by lamenting that habits of play engendered by society's turn to television as its primary form of engagement, entertainment, and connectivity, ways of doing which have culminated in the "present crisis" of automaticity and hyperspecialization: "Continuation of the sectarian process of specialisation could only lead to one result, the creation of an irresponsible scientific priesthood, preoccupied entirely with its liturgy and its mysteries; and, in due course, to a popular revulsion from scientific knowledge and a slump of scientific credit that would usher in a dark age as vicious and prolonged as the aftermath of an atomic war."¹¹³



Figure 7.8. Still from Stanley Kubrick's *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb* (1964).

Disassembling Publics: Postwar Experiments in Mind Control

In the biological sciences it is a good principle to be your own rabbit, to experiment on yourself. —William Grey Walter, *The Living Brain* (1953)¹¹⁴

Aldous Huxley's observation in *Brave New World* that “one believes things because one has been conditioned to believe them” is the cybernetic worldmaking of *psychic driving*, applied on the scale of global brain activity, in which human subjectivity is the media, the project, and process. The opportunity for opening up new neural pathways—and for eugenically reconstructing socially connected, resilient, informational publics from the traumatic ruins of wars, economic pressures, depression, etc. became the focus, even the obsession of neuropsychiatric research. Before settling into final section of this chapter, I would like to acknowledge and place critical emphasis on how much we *don't know* about the history of Cold War-era neuropsychiatric experimentation on human subjects, and the opaque or Dark Enlightenment world of military research institutions that performed extensive experimental behaviorist research on human subjects.

For one pertinent example: research for this chapter was enabled by funding generously provided, in two successive periods, by McGill University's Osler Library via the Dr. Dmitrije Pivnicki Award in Neuro and Psychiatric History. Dr. Pivnicki's mentor at the Allan Memorial Institute was the notorious Dr. Ewen Cameron, known for his experiments with psychedelic drugs, electroconvulsive therapy, and other extreme neurological interventions on his psychiatric patients, without their knowledge or consent. Dr. Pivnicki was a Senior Psychiatrist at the Allan Memorial Institute, and a collaborator in the neuropsychiatric experiments funded by the CIA (via the benign-sounding Society for the Investigation of Human Ecology, or SIHE¹¹⁵). There is not one single file in the Pivnicki fonds (I searched comprehensively) in which reference to Dr. Pivnicki's LSD research during the early 1960s appears. According to Survivors Allied Against Government Abuse (SAAGA), it is believed that former Prime Minister Brian Mulroney—Dr. Pivnicki's son-in-law—“had all documentation related to Dr. Pivnicki purged from McGill records.”¹¹⁶ And yet, ironically, it also funds this annual award for research and discovery in the social history of medicine. Similarly, I encountered a research block upon discovering files pertaining to MK ULTRA had long ago been systematically removed from public view or destroyed. Much of the material evidence of these experiments, the “data,” was destroyed at the

local institutional level—specifically, by the director of these experiments at Allan Memorial Institute of Psychiatry (AMI) in Montreal and at the larger institutional level of the CIA, with its massive network of military-medical-psycho-pharmaceutical mind and behavior control subprojects. The biggest block to this research, however, was COVID-19, which effectively aborted a March 2020 trip to explore the university’s archives (McGill University Archives and Osler Library) two days into research.

In the present moment, attention to US government-sponsored covert operations involving human experimentation—otherwise largely ignored or marginalized for decades—is mostly being driven by the far-right QAnon movement, with its narrativization about a decades-long “deep state” mind control masterplan inspiring what has amounted to a political necromancy with MK ULTRA.¹¹⁷ However, in this section, I explore the significance of this experimental realm of mind control, cultivated at government-funded laboratories, clinics, and hospitals upon mostly unwitting human subjects in the immediate post-World War II era until the program was “terminated” in the mid-1960s. It is through the research conducted during this period that behaviorism made its most disturbing contributions to social life by creating new, experimentally tested, neuro-invasive methods to modulate behaviors and patterns at the level of publics through the administration of fear and reward on the individual brain, to the point of invoking breakdown.

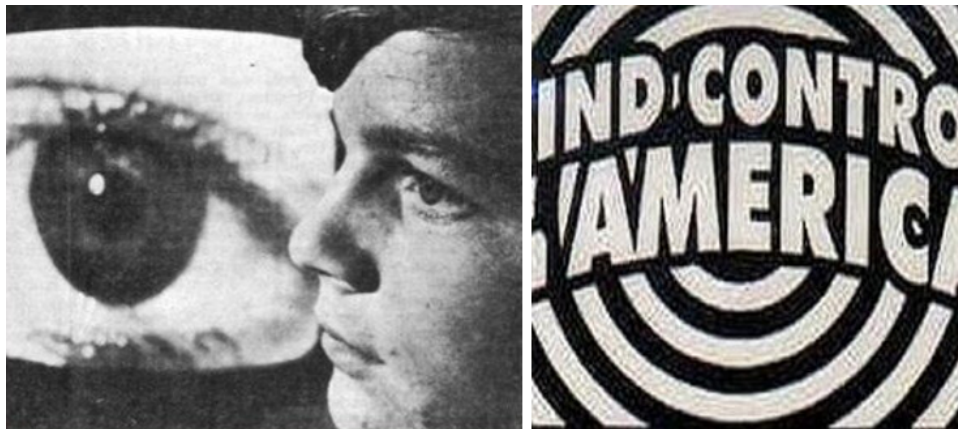


Figure 7.9. “Mind Control in America.”

MK ULTRA was a vast covert and highly classified US “mind control” program initiated in the Cold War era that included 149 subprojects in mind control technologies, behavior modification,

nervous system manipulation, hormonal manipulation and other forms of chemical manipulation, energy manipulation, mind manipulation, mental and habitual monitoring, and electronic surveillance. The presumed goal of these experiments was to understand and develop methods for brainwashing in response to Cold War fears of Communists brainwashing North American soldiers. All documentation on this program was ordered destroyed by CIA Director Richard Helms in 1973, when the program was formally shut down. The small cache of records that remain include over 150 patents pertaining to a wide variety of subjects: artificial telepathy (voice-to-skull technology), behavior modification through radio frequencies, directed energy weapons, electronic monitoring, implantable nanotechnology, brain wave manipulation, nervous system manipulation, neuroweapons, psychological warfare, satellite terrorism, subliminal messaging, and more. Certain records—for example, those that had been misfiled—survived and were made public through a Freedom of Information Act request in 1977, resulting in the class action suit of nine Canadian plaintiffs against the US government, the Canadian government, the McGill University Health Centre, the Royal Victoria Hospital, and McGill University for multigenerational damages and traumas experienced by those directly experimented upon, without their informed consent or that of their families.

Cameron’s methods of depatterning and repatterning the brain included: (i) drug-induced sleep/coma; (ii) intensive electroconvulsive therapy (“ECT”); (iii) “psychic driving”; (iv) sensory deprivation; and (v) administration of various barbiturates, chemical agents, and medications to suppress nerve functionality and activation. This research was classified as “sensory deprivation”—a literal attempt to sever the ties between subjects and their senses, thus creating a state of suspended animation where people felt disconnected from time and space.¹¹⁸ Some left the Allan Memorial Institute with severely impaired abilities to form new memories and/or no memories of their lives prior to entering the institute.¹¹⁹ Naomi Klein refers to this as Cameron’s “shock and awe” treatment and “warfare on the mind.”¹²⁰ Through these alleged therapeutic experiments, subjects suffered irreparable damage; some were rendered incapable of recovery. As of Spring 2023, the Canadian government and province of Quebec continue to settle lawsuits with Cameron’s former patients at the Allan Memorial Institute and their families—these settlements have been characterized as shrouded in secrecy and nondisclosure agreements¹²¹—alleging that

Cameron’s “Montreal Experiments” were techniques of psychological conditioning and social engineering disguised as treatment for patients suffering from real psychiatric conditions. Thus, in Canada, what is playing out right now is a very slow leak of this history of secret, forced, and illicit neuroscientific human experimentation conducted upon publics, providing critical opportunities for evaluating how these experiments inform stochastic terrorism, conspiracy-theory digital media empires, and other forms of social *uncontrol* at work today.

The origins of mind control research in failures of intelligence

Unlike Sachsenhausen, which was chiefly concerned with endurance tests, Auschwitz was focused on brainwashing and consciousness control. Plötner continued this barbaric series of tests in Dachau. —Norman Ohler, *Blitzed*

At Dachau concentration camp, under an experiment led by Dr. Kurt Plötner, Nazi doctors used pharmacological methods of torture, primarily mescaline—a cacti-derived hallucinogen with a 5,000-year history in Indigenous spiritual ritual and healing ceremonies and currently touted as an effective psychotherapeutic drug—on prisoners as an enhanced interrogation method and behavior modification technique. It was used similarly to an emetic for information or intelligence gathering, because the dosed subject could not “contain” or “control” their information in this altered state, but also, as a neuro-psychopharmacological tool to test the extent to which they could eliminate the will of the person examined by inducing schizophrenic behavior.

The prisoners were administered the psychoactive drug covertly, via spiked drinks. As Norman Ohler details in *Blitzed*, one of several books that identifies Nazi psychopharmaceutical experimentation on concentration camp prisoners as a direct precedent to the US government’s MK ULTRA project, Plötner secretly served the mescaline in coffee or alcohol, struck up “innocuous” conversation with his subjects, and when the mescaline began to take effect after thirty to sixty minutes:

The experimental subjects who were ‘opened up’ by the drug were now informed that in this special zone where the interrogation was taking place Plötner had direct access to their soul. He suggested they should tell him everything of their own free will or something terrible would happen.¹²²

The drug was administered covertly, leading many test subjects to react to the drug with terror, as if they had lost their minds, which made for easy to control subjects—but not quite what could be described as a predictable method of “mind control.” For these pharmacological experiments in chemical mind control and the infamous hypothermia and aviation research (e.g., experimental tortures conducted at Dachau in which inmates were submersed in tubs of ice water and timed to see how long it might take a German pilot downed in the North Atlantic to die; or crushed to death in high-altitude pressure chambers while performing as human crash test dummies to ensure German pilots’ safety at high altitudes), after the war American prosecutors at Nuremberg charged the Dachau doctors with “crimes against humanity” and drafted the Nuremberg Code of medical ethics.

America’s wartime intelligence agency, the Office of Strategic Services (OSS)—reconceptualized as the Central Intelligence Agency (CIA) in 1947—was doing its own experiments with chemical mind control. In the early 1940s, a “truth drug committee” was initiated under the leadership of psychiatrist Dr. Winfred Overholser. In the spring of 1943, the committee started a drug testing program in cooperation with the Manhattan Project, testing out psychoactive drugs, e.g., cannabis indica, mescaline, several barbiturates, and scopolamine, on human experimental subjects—federal agents, prisoners, criminals, US soldiers stationed at Army bases throughout the US. After the war, Ohler recounts, “the Nazi drug experiments were imported to the US to further explore human subjectivity. The secret US programme MKUltra based on Plötner’s initial work took ‘Mind Kontrol’ as its goal.”¹²³

MK ULTRA began with a proposal from Richard Helms outlining a “special funding mechanism for highly sensitive CIA research and development projects that studied the use of biological and chemical materials in altering human behavior.” It was approved by the Director of Central Intelligence (DCI), Allan Dulles, on April 3, 1953. A 1963 CIA report on the various MK ULTRA projects stressed the strategic interdisciplinary development of the program over the past decade, as the CIA’s Technical Service Division explored use of “radiation, electro-shock, various fields of psychology, psychiatry, sociology, and anthropology, graphology, harassment substances, and paramilitary devices and materials” to not only understand how to control the human mind, but how to annihilate it.¹²⁴



Figure 7.10. Still from Stanley Kubrick's *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb* (1964).

Becoming science fiction

Everything is becoming science fiction. From the margins of an almost invisible literature has sprung the intact reality of the twentieth century. —J.G. Ballard¹²⁵

Aldous Huxley's *Brave New World* (1932) describes a future of highly engineered “scientific dictatorships” in which humans are adapted and enslaved to technology. In *Brave New World Revisited* (1958), Huxley reflects on newer, ever more invasive forms of neuropsychological research, some of it informed by the advertising field's development of anticipatory “motivational research.” With this, he argues, “the art of mind-control” is “in the process of becoming a science.” He describes, in almost Burroughsian terms, the viscerality of modern politics and propaganda, by which control targets and tethers psychological and physiological responses because “strong emotion (as every actor and dramatist knows) is in the highest degree contagious.”¹²⁶ Strong emotions—the strongest being hate and fear—are bioweaponized to disable constituent “rational” and “democratic” faculties, to make homeostatic/allostatic comportment, both in individuals and groups, impossible. He also identifies two types of propaganda: (1) rational propaganda that appeals to deliberate cognitive thought processes and (2) “non-rational” propaganda that elicits emotional responses and arouses passions to serve the interests of power. He discusses how

technologically enabled mass propaganda, combined with technological society's "non-stop distractions," will be the principal techniques used to dominate future publics. As an example, Huxley analyzes Hitler's intoxicating appeal to "the masses," the large groups he assembled into crowds—"a crowd is chaotic, has no purpose of its own and is capable of anything but intelligent action and realistic thinking"—thus demonstrating that successful propagandists need to learn how to manipulate their individual followers' drives and feelings, instincts and emotions because, in Huxley's view, this influence is akin to "tyranny over the mind."¹²⁷

In a speech delivered at Berkeley in 1962, "The Ultimate Revolution," Huxley reflects on the government's project of "brainwashing enhanced by pharmacological methods" in the cultivation of control societies: "If you can get people to consent to the state of affairs in which they are living . . . the state of servitude, the state of being, having their differences ironed out and made amenable to mass-production methods on the social level—if you can do this . . . you will have a much more easily controllable society."¹²⁸

Behaviorism—and expanded fields of behavioral research and control—are tied to historical "ages of anxiety" in which rapid changes in technologies, social composition, and social behaviors catalyze collective cultural panics. The same could be said for the mind control experimentation that arose out of World War II. To this end, this section focuses on behaviorist Donald Ewen Cameron's experimentation on patients at McGill University's newly established Allan Memorial Institute of Psychiatry from 1957–1964 as part of the CIA's Project MK ULTRA. Many of these patients only discovered the extent of experimentation upon them by reading about it in the newspaper several decades later.¹²⁹

During World War II, owing to the volume of brain injuries and psychic traumas of soldiers returning from the war abroad, and the aforementioned desire to condition a more resilient public for postwar American consumer life, there was much discussion at the Montreal Neurological Institute, one of the world's only institutions at the time dedicated to interdisciplinary brain research and the holism of the nervous system, about the necessity of integrating a psychiatric component to their pioneering studies in the brain's self-organization and anomalies arising from illness, injuries, degeneration, etc. When William Grey Walter says Norbert Wiener's pessimism about the human use of cybernetic tools was untimely—he was likely unaware of the work

Cameron was doing at Ravenscrag, aka the Allan Memorial Institute, jointly affiliated with McGill University and the Montreal Neurologic Institute (MNI) in Montreal at the time.¹³⁰

The Montreal Neurological Institute first opened its doors to the public on September 27, 1934. The building was designed by its chief physician, Dr. Wilder Penfield, as a proto-networked space modeled on the nervous system. Penfield's speech upon the opening of the Institute began with the following metaphor:

The significance of the building lies in the thing that it houses. The building is only a shell. Within the shell should lie a living mollusc, a collective creature that is expected from time to time to form a pearl of great price.¹³¹

There was little material precedent for this anywhere in the world at the time—the building was designed to discourage looking at the brain in too isolated a fashion, so it cultivated collaboration and innovation by design. Specifically, it was floor-planned to encourage interdisciplinarity and dialogue among neurologists, neuroscientific researchers, neurosurgeons, pathologists, and psychiatrists. The building made it possible for all these different actors to interact and learn from each other. The only component the networked facility lacked, Penfield lamented, was a neuropsychiatric clinician literate in neuropathologies and emerging neurotechnologies, like EEGs, and neurotherapies, like ECT. The neurological component was modeled on a mollusc; without this component—and the connectivity it created space for—“the organism” was incomplete, thus requiring relationships with other organisms to achieve full expression.

In January 1942, Dr. Penfield wrote to Dr. Adolf Meyer at the Johns Hopkins Hospital, concerning plans to initiate a department of psychiatry at McGill that would complement/add to his vision for an institution devoted to all aspects of nervous system, specifically describing his ideal candidate as one who “should be young; [and] must have some knowledge of basic sciences, either the biochemistry of the nervous system, the anatomy of the neuropathology.” The Department of Psychiatry of McGill University was established in early 1943. Like the MNI, the building was designed by its director with immensely precise instructions for a specific research outcome. Unlike the MNI, the department was housed mostly in a preconstructed building: a gothic nineteenth-century mansion named “Ravenscrag,” built in 1860–1863 by shipping magnate Sir Hugh Allan—at the time one of the wealthiest and most-despised men in Canada—that had

been gifted to the Royal Victoria Hospital by the deceased man's family, to be used specifically as a peaceful place for psychiatric patients to convalesce. The mansion, renamed the Allan Memorial Institute in 1943, is located on Mount Royal a few meters up from the MNI, but nevertheless appears isolated and imposing. Although it is currently used by the Research Institute of the McGill University Health Centre (MUHC), which touts itself as “one of the largest and most modern”¹³² academic health networks in North America, the building telegraphs ideas about the brain and neuroscience that, even by the mid-twentieth century were rapidly becoming outdated, passé, inaccurate, or dangerously flawed.

In Cameron's notes and correspondence regarding his conditions for assuming his role as director of the AMI, he specifies the building should be refurbished to appear unlike a hospital, institution, or any old building with history: he wanted his psychiatric hospital to have the aesthetic sensibility of a motel, so that upon arrival, by design, patients would get the sense of the impermanence of their condition; that their physical transience in the space and that of their condition were conjoined. The new wing of the building, designed by Dr. Cameron, was all glass with revolving doors. He also piloted an “open door” policy for patients which he called “giving responsibility back to the patient.”¹³³ At the time, most psychiatric facilities were locked, an institutional norm for depriving residents of freedom of movement and hiding patient care from stigmatized public perception of mental illness. Rebecca Lemov's essay on Cameron's work in Montreal highlights the “openness” with which this human experimentation was conducted, that the experiments were not undertaken in a secretive or covert way that might denote their government ties. But, I will note, Lemov fails to consider the lack of openness with regard to communicating with the patient the course of treatment they would undergo; no regard is given to the patient's consent to the clinical experiments.

By many accounts, the neuropsychiatric experiments conducted by Dr. Cameron at the Allan Memorial Institute between 1953–1964 had the exact opposite outcome applied to them: “inmates,” as they called them, would leave their therapeutic treatments traumatized, brain damaged, with completely changed personalities, and in some cases, “emotionally crippled” for life.¹³⁴ Canadian citizens pursuing treatment for mild to severe psychopathies (e.g., postpartum depression, “psychosomatic” pain issues, anxiety) were used as experimental subjects for

behavioral and mind control without their knowledge or consent. Because of the nascent state of brain research, extreme experiments—with no therapeutic value aside from testing and surpassing the limits of the human mind—were performed with massive doses of drugs, such as LSD, to invoke hallucinations and curare to bring on temporary paralysis; intensive electroshock treatments for “mental depatterning”¹³⁵; and an even more sinister-sounding process of mental breakdown that Cameron termed “*psychic driving*.”

Psychic driving

I was suspended in space in a deep black hole. I had no idea that I was a human being. I was without knowledge of my appendages. I had no sense of solidity. I was floating. I had no—I was completely disoriented. I thought I was an organism. —Testimony of Dr. Mary Morrow¹³⁶

The fact that some people were neurotic—that is, did not have conditions that were a major disturbance—does not mean that they weren’t people who were rational and capable of thinking and remembering, until this work was done. —Testimony of Dr. Harvey Weinstein¹³⁷

“Can psychology be automated?”¹³⁸ This is the question animating Cameron’s research from 1952–1963. Colleagues at the AMI in the 1950s–1960s describe Cameron’s “aggressive” use of intensive ECT for “depatterning”—what happened when a patient became unable to walk, feed themselves, would likely be incontinent and otherwise reduced to an infantile state, where they could then be “repatterned” by psychic driving, for example.¹³⁹ Psychic driving was the cornerstone of Cameron’s twelve-year project to automate psychoanalysis. It was in part based on Cameron’s adaptation of the Cerebrophone (1940s). The original “sleep-teaching” device was a \$120 suitcase-sized phonograph with a clock and speaker attached to it that would enable the listener to learn a language or unlearn a bad habit as they slept. In his attempts to depattern subjectivity and wipe the subject’s personality, Cameron experimented with different forms, techniques, and degrees of control via sleep manipulation and sleep and sensory deprivation.

The process of psychic driving—which Cameron sometimes refers to in his writings to as “*automatic psychotherapy*”—involved using a high-fidelity mechanical tape recorder to obtain his patients’ disclosures of their most intimate hopes, fears, anxieties, then using sedatives, usually strong barbiturates, to place the patient into days or weeks-long periods of “sleep therapy” (up to

sixty days) during which the patient would sleep for up to twenty-two hours per day. During this period in the “sleeping room”—more on this later—a tape recorder is placed under their pillow, or a patient might be wearing a football-type helmet with modified speakers, and the patient is subjected to the constant repetition of the tape-recorded messages while they sleep. Usually, these are looped recordings of negative, critical messages, often of their own voices revealing their own fears, failures, vulnerabilities (via interviews delivered to Dr. Cameron while under the effects of sodium amytal). In his own words, psychic driving involved “wearing down of defences in the sense that defences were maintained only by means of continual effort and if they are continuously overloaded, their breakdown is to be expected. Analogous to this is the breakdown of the individual under continuous interrogation.”¹⁴⁰

These recordings were often played—fed back to the patient—up to 500,000 times, with the repetition magnifying the extraordinary emotional power of sound—its immediacy and ‘authenticity’—to completely break down the subject. Through EEGs, physical exams, emerging psychiatric diagnostic tools like Rorschach tests and art therapies, and interviews with doctors—first by a resident doctor, then by the chief resident, and then, the institution’s foremost authority, Dr. Cameron. Patients were evaluated on the basis of their potential to *breakdown* and thus score a *breakthrough* for scientists, specifically behaviorists, working towards the technological systems-wide management of human behavior based on feedback.

Dr. Cameron writes that he got the idea for psychic driving when researching the KGB’s “therapeutic intervention” after the 1956 Hungarian uprising.¹⁴¹ This technique, and the perfectibility of mind control being actively worked upon by a doctor unaffected by the trauma inflicted upon unwitting subjects in his mind-control experiments, was the lynchpin of Project MK ULTRA, which as any “conspiracy nut” will tell you, is behind every major sociopolitical event in the US from the Kennedy assassination onwards. As Tiqqun lays bare: “Spurred on by the Cold War and its ‘witch hunts,’ the socio-cyberneticians search relentlessly for the pathological behind the normal, *the communist that lies dormant in everyone.*”¹⁴²

One of Dr. Cameron’s former patients, who was subjected to these experiments under the guise of treating his “psychosomatic” leg pain (ultimately a physiological wound which healed after he received several shots of cortisone) describes his experience as “*mental rape,*” or

specifically what William Burroughs describes in *Naked Lunch* as the “brain rape” of “de-anxietized man”: the destruction of the mind through psychological methods attacking the patterns that construct self and identity. By depriving the subject’s mind of contact with an outer world, and thus forcing it on itself “toward a more infantile state” in which “learned or structured personality traits fall away,” Cameron produced valuable research for the contemporary control project. As Critical Art Ensemble writes about the secretive history of these government-funded experiments using “human lab rats”: “The security state needs results now, and has no time to care about how the results will play in the public sphere or in the near future. In fact, it’s best if the public has nothing to do with such important issues.”¹⁴³ This temporality undergirds daily life through “the embedding of technical and linguistic automatisms in the enablers and connectors of social interactions and of production processes.”¹⁴⁴

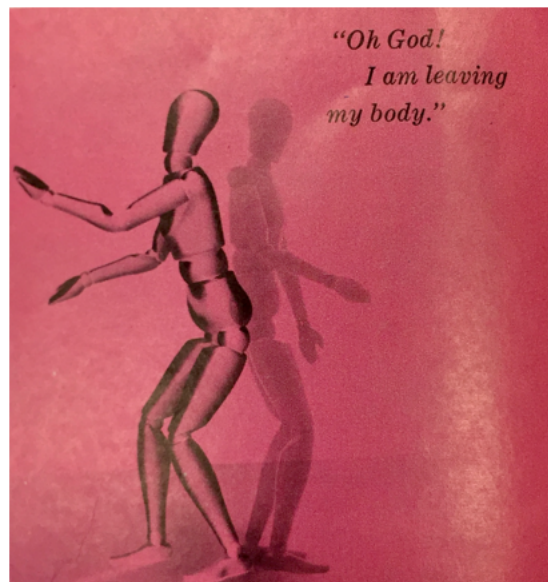


Figure 7.11. Out of body, out of mind.

Brainwashing, Behaviorism, and Anticontrol

We’re living in this incredibly fluid moment when really no one is sure what society is for anymore. The old stories are dying. These new ones are floating around, but don’t make any sense. —Adam Curtis, discussing his collaboration with choreographer Robin Kay on the popular documentary and experimental dance production *MK ULTRA*

Despite its foreclosure as an empirical science many years ago, behaviorist methodology has greatly contributed to shaping contemporary subjectivity. Consider the degree to which the behaviorist's "objective observation" of external data has been seamlessly integrated into and augmented by the Internet of Things as the Internet of Behavioral Economics: the constant monitoring of human interactions and activities for hyper-personalized analytics in the increasingly impersonal realm of digital capital and monetization. Behaviorism helped to normalize objective observation, a mechanical gaze to use on the self as a tool for self-reinvention, taking form as a learning machine in continuous real-time recursive feedback with a rapidly technologizing environment. In a similar fashion to Lancaster's monitorial methodology, behaviorism normalized the feedback form as tool for self-governance, a survival skill needed by individuals to function within networks of self-regulating systems. McLuhan recognized in the mid-twentieth century's cybernetic culture, real potential for the flood of electric, informational power to overwhelm human subjectivities.¹⁴⁵ That there were already tools for modulating affect, retraining the rational Enlightenment subject for affective malleability in addition to shifting attention from action to reactivity.¹⁴⁶

McLuhan issues that the potential social remedy to everyone's connectivity to these devices, is to recognize the degree to which this connectivity renders us irrevocably responsible for each other. In the form of a concrete poem, he writes: "there is absolutely no inevitability as long as there is a willingness to contemplate what is happening."¹⁴⁷ Thinking through this together is mutual aid for the "information age" or the "age of control." Behaviorist tenets such as there is no such thing as "private life" or an inner world constituted by consciousness has helped to transform the modern disciplinary subject into data-based learning machines:

Ours is the first age in which many thousands of the best-trained individual minds have made it a full-time business to get inside the collective public mind. To get inside in order to manipulate, exploit, control is the object now. And to generate heat not light is the intention. To keep everybody in the helpless state engendered by prolonged mental rutting is the effect of many ads and much entertainment alike. —Marshall McLuhan, *The Mechanical Bride* (1951)¹⁴⁸

[T]he practice of government is less and less identified with state sovereignty. In the era of networks, governing means ensuring the interconnection of people, objects, and machines as well as the free—i.e., transparent and controllable—

circulation of information that is generated in this manner. This is an activity already conducted largely outside the state apparatuses, even if the latter try by every means to maintain control of it. —Invisible Committee, *To Our Friends* (2014)¹⁴⁹

Etymologically, discipline comes from *disciplina*, a Latin term with fourteen possible meanings, including: training, tuition, teaching, instruction, learning, knowledge, system, science, and regulation of life. In transitioning from discipline to control, Deleuze tells Antonio Negri in their conversation on control and becoming, society becomes characterized by *souci*—in all its various meanings (worry, care, anxiety)—something one’s always having to think about.¹⁵⁰ Anxiety is an efficient, effective, and economical agent of social control. As discussed in this dissertation, in the section on Lancaster’s system, using the energetics of anxiety, the bodies of his students, intentional design, and some minor props, Joseph Lancaster engineered a highly efficient learning machine always optimizing in relation to the biovigilance of others. A century later, in the mid-1970s, Deleuze imagined a near future where every private citizen is a part of a “large abstract machine which encodes monetary, industrial and technological fluxes” and must learn to make a successful business of themselves.¹⁵¹

The business of anticontrol

We are trapped in the belly of this horrible machine, and the machine is bleeding to death. —Godspeed You! Black Emperor, “The Dead Flag Blues” (1997)

Disentanglement from the neuro-totalitarian form of capitalism is the political and philosophical problem of our time. —Franco “Bifo” Berardi, discussing *Futurability* (2017)

In Cameron’s “psychic driving” and “depatterning” experiments, human adults are “liberated” of their personalities—in particular, of their maladaptive habitual behaviors—and “reduced . . . to an infantile state so that they can then be rebuilt according to the wishes of the experimenter.”¹⁵² Re-programmability or the “accelerating of therapeutic reorganization” was Cameron’s professed goal with the experiments, unfortunately, for many subjects, the extreme neurological traumas suffered through the depatterning experiments—“electric lobotomies” and retrograde amnesia, drug-induced brain damage and memory loss, extreme sensory deprivation and sleep studies that

produced disorientation and hallucinations, severe breakdowns and incontinence—left them with limited comprehension of their situation and chronic debilitation of their capacity for self-governance or self-expression. Throughout these experiments, Cameron carefully observed patients’ responses, fine-tuning psychoactive techniques to test the individual patient’s defense mechanisms, the patient’s own tolerance to stress, and their “capacity for desensitization.”¹⁵³ He did this seemingly without any ethical considerations for the psychological well-being of his patients, despite having served a decisive role as medical expert witness at the Nuremberg Trials, notably declaring Nazi Rudolf Hess “mentally fit” to stand trial. These experiments, and their purposeful public disclosure as therapeutic methods designed for the most desperate of cases (the ethical gray area of “desperate cures”), has become foundational to the global business of anticontrol, and to the contemporary neurogovernance of plastic publics.¹⁵⁴

Norbert Wiener’s criticism of potential misuses of cybernetics for social control, or *cybernation*, targets the US military and its takeover of scientific research during World War II and the Cold War. Cybernation describes processes like the technological governance of social production and communication, but also, the fine-tuning of public emotion, such as with fear-based campaigns designed to stoke social anxieties of everyday life’s entanglement with cybernetic machines and nuclear panic. Cybernation penetrates every level of social life and is responsible for making “informational objects out of each other.”¹⁵⁵ We have witnessed the mid-twentieth-century faith in technological and scientific progress, in seeing the cybernetic reshaping of our bodies, minds, and relations as an unalloyed good, collapse under the speed and stress of our new and escalating modes of feedback. In Deleuze’s control societies, powerful algorithms steer subjectivities already disoriented by a “generalized crisis of relation”¹⁵⁶ into the serpent’s spirals of permanent chaos that folds into Mark Fisher’s “capitalist realism,” and which entails subordinating oneself to a reality that is infinitely plastic, capable of reconfiguring itself at any moment, uncontrollable, threatening “a purely fungible present in which spaces and psyches alike can be processed and remade at will.”¹⁵⁷

The “business” of anticontrol concerns how the control project is advanced through the loss of self-control. It is a very anti-Victorian or nonmodern pathway to control, one that presages the technologized dandyism of contemporary “influencing,” for example, or exerts influence via

“affective capitalism,”¹⁵⁸ with its Reality Studio-inspired (how Burroughs referred to the engineering of everyday social life)¹⁵⁹ “experience marketers,” and “mood atmospheres,”¹⁶⁰ and where recombining the collective brain in computational terms (e.g., the aggressive development of neuro-interfaces, neural engineering systems, and “targeted neuroplasticity training” [TNT]) appears as the main task of capitalist subjectivation.¹⁶¹

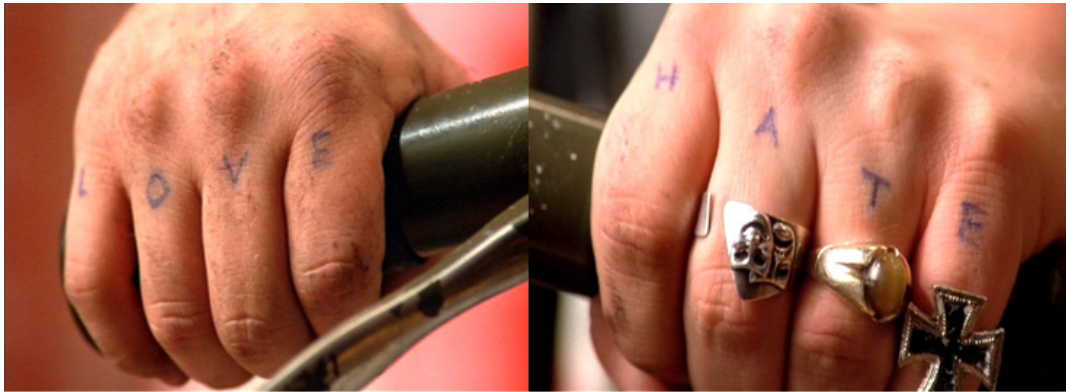


Figure 7.12. Love / HATE.

Cybernetic trauma and conspiratorial horror

Believers in the shock doctrine are convinced that only a great rupture—a flood, a war, a terrorist attack—can generate the kind of vast, clean canvasses they crave. It is in these malleable moments, when we are psychologically unmoored and physically uprooted, that these artists of the real plunge in their hands and begin their work of remaking the world. —Naomi Klein, *Shock Doctrine* (2007)¹⁶²

[C]onspiratorial horror is the only logic of the security state. Scary shit. —Critical Art Ensemble, in *Lab USA: Illuminated Documents* (2001)¹⁶³

In this chapter, we have looked at some examples of how in the cultural *longue durée* of the past seventy or so years, cybernetic-capitalist forms of control—involving rapid, continuous, networked neural interconnectivity with responsive communicative technologies—have mutated the relational fields of cognition, sensibility, emotions, and affect. Wiener proposed that cybernetics is also a way to understand the “palpable effects of information and communication on perception and personality, the power of mass communication to shape the lives of individuals

and cultures, the interplay of complex communication processes that connect human beings to the living world around them.”¹⁶⁴

The radical behaviorism of new forms of digital sociotechnical control in neoliberalism and beyond—what Bernard Stiegler refers to as a new era of cybernetic capitalism and algorithmic governance—are feedback forms that now prey upon all aspects of cognition and attention. In Orit Halpern’s work, this is the “interface-filled life” of the present, where “the currency of the realm is human attention at its very nervous, maybe even molecular level” to form “agglomerations of nervous stimulation; compartmentalized units of an individual’s attentive, even nervous, energy and credit.”¹⁶⁵

Too fast, too fast,” Franco Berardi laments, “the infosphere around my brain is going too fast for emotional and critical elaboration.”¹⁶⁶ In *The Second Coming*, Berardi invites his reader to think about the doubling relation between chaos and conscious subjectivity; how, “today all attempts to govern chaos seem doomed to fail as info-nervous stimulation has intensified beyond the limits of conscious processing.” Berardi questions whether fascism is back. Not as “macro fascism” that identifies and needs a mythological leader or authoritarian personality as an external source of concentrated power; nor as “micro fascism,” a process by which the authoritarian personality is embodied by subjects who embed fascisms and mechanisms for self-governance in their own habits and behaviors; but rather, as the new regime of nano-fascism, a “ready-at-hand” kit of “specifications” that “permeate the body down to all of its nano units” from some distant, unknowable source of control: “the secluded sphere of automation is ceaselessly pervading and wiring the social brain.”¹⁶⁷

There are *double movements*—countervailing forces or feedback loops—at work in this new regime of nano-fascism: such as how the speed and force of technology’s increased power over attention and social life have not been matched by society’s power over technology. In fact, “technological potency has steadily expanded while social consciousness has decreased proportionately.” This *double dynamic* has provoked an “explosion of unawareness,” and society is no longer able to govern itself at the same time technologies for cognitive automation and automated simulation of social relations are amping into collective unintelligence.¹⁶⁸

On top of that, are further abstracted double movements, such as between power and noise: “Power no longer commands silence. On the contrary, power is now the master of noise.”¹⁶⁹ The

new foundation of political power is not ideological consensus or obedience, but rather a “social stranglehold” of ubiquitous connections, noise, mental confusion, and emotional distress. Berardi writes, “Beyond a certain level of intensity, information is no longer received and interpreted as a complex set of statements. Rather it is perceived as a flow of nervous stimulations, an emotional assault on the brain.”¹⁷⁰ Attention is absorbed into information, and the resulting confusion/inability to distinguish things critically is where we are becoming psychically driven. Given what we know about cybernetic feedback, the greater the control the greater the incontinence; in fact, we need to become much more aware that the energies and destructive capacities of incontinence are being harnessed and cultivated. To this end, the following chapter will revisit and probe Burroughs’ contribution to the expanded diagram of control, and the final chapter of this dissertation will look at how disciplinary forms of radical behaviorist control have mutated into cybernetic forms of “anticontrol” and incontinence.

Notes

¹ See Robert Kahn and Peter Wagschal (eds.), *R. Buckminster Fuller on Education* (Amherst: University of Massachusetts Press, 1979), 130; R. Buckminster Fuller, “R. Buckminster Fuller on Education” (1980), <https://soundcloud.com/dymaxionlibrary/rbf1980-lecture-college-educationandworld>.

² Futurist Filippo Tommaso Marinetti to Wyndham Lewis, as recounted by Benjamin Noys in *Malign Velocities: Accelerationism and Capitalism* (Winchester, UK and Washington, USA: Zero Books, 2014), np (ebook). See also Wyndham Lewis, *Blasting and Bombardiering* (Berkeley: University of California Press, 1967), 34.

³ Nick Land, *The Dark Enlightenment*, nd, <https://www.thedarkenlightenment.com/the-dark-enlightenment-by-nick-land/>.

⁴ Norbert Wiener, *Cybernetics: Or Control and Communication in the Animal and the Machine*, 2nd ed. (Cambridge, MA: MIT Press, 1961), 19.

⁵ See, for example, Norbert Wiener and J.P. Schädé, *Progress in Brain Research 17: Cybernetics of the Nervous System* (Amsterdam/London/New York: Elsevier Publishing Company, 1965).

⁶ Norbert Wiener wrote *Cybernetics: Or Control and Communication in the Animal and the Machine* in 1947; it was published in 1948.

⁷ See also W. Ross Ashby’s work on the peculiarities and uses of cybernetics in *An Introduction to Cybernetics*, 2nd ed. (London: Chapman & Hall Ltd., 1999/1957).

⁸ See André-Marie Ampère’s *An Essay on the Philosophy of Sciences* [*Essai sur la philosophie des sciences*], 1838, <https://archive.org/details/essaisurlaphilos00amp>.

⁹ Richard Barbrook, *Imaginary Futures: From Thinking Machines to the Global Village* (London and Ann Arbor, MI: Pluto Press, 2007), 49.

¹⁰ This describes the work of the Macy Conferences (1946–1953). See Steve Joshua Heims, *The Cybernetics Group* (Cambridge, MA and London: The MIT Press, 1991).

¹¹ Learning involves feedback mechanisms. The neuronal explanation for ‘how the brain learns’ is the following: neural networks in the brain are flexible, probabilistic, and rely on feedback to operate. The output of the neurons feeds back into the input of the neurons. And this process goes on over and over again. *So long as the feedback is present the neurons will learn.*

¹² Arturo Rosenblueth, Norbert Wiener, and Julian Bigelow, “Behavior, Purpose and Teleology,” *Philosophy of Science* 10, no. 1 (January 1943): 18–24.

¹³ See also Warren S. McCulloch and Walter Pitts, “A logical calculus of the ideas imminent in nervous activity,” *Bulletin of Mathematical Biophysics* 5 (December 1943): 115–133; Warren S. McCulloch, “The Brain Computing Machine,” *Electrical Engineering* 68, no. 6 (June 1949): 492–497; W. Ross Ashby, *Design for a Brain* (New York: John Wiley and Sons, 1952); Wladyslaw Sluckin, *Minds and Machines* (London: Penguin, 1954).

¹⁴ Tiqqun, *The Cybernetic Hypothesis*, trans. Robert Hurley (South Pasadena: Semiotext(e), 2020), 10.

¹⁵ The Philosophy of Science Club was an interdisciplinary seminar on scientific method organized by Dr. Arturo Rosenblueth at Harvard Medical School from 1933–1944. See P.R. Masani, *Norbert Wiener, 1894–1964/Vita Mathematica* 5 (Basel: Birkhäuser, 1990). Rosenblueth and Wiener would become key collaborators. Rosenblueth is perhaps best known for *Mind and Brain: A Philosophy of Science* (Cambridge, MA and London: The MIT Press, 1970).

¹⁶ Gilles Deleuze, *Foucault*, trans. Seán Hand (Minneapolis: University of Minnesota Press, 1988), 27.

¹⁷ Franco “Bifo” Berardi, *The Second Coming* (Cambridge, UK and Malden, MA: Polity, 2019), 44–45.

¹⁸ Norbert Wiener, “The Machine Age” [withheld from publication in *The New York Times*], 1949, <http://www.nytimes.com/2013/05/21/science/mit-scholars-1949-essay-on-machine-age-is-found.html?pagewanted=2>.

¹⁹ Dale Purves, George J. Augustine, David Fitzpatrick, Lawrence C. Katz, Anthony-Samuel LaMantia, James McNamara, and S. Mark Williams (eds.), *Neuroscience*, 2nd ed. (Sunderland, MA: Sinauer Associates, 2001). According to the biosemiotic view of life (cybernetics applied to living organisms), all living things exist in feedback with other living things.

²⁰ See, for example, Douglas S. Ramsay and Stephen C. Woods, “Clarifying the Roles of Homeostasis and Allostasis in Physiological Regulation,” *Psychological Review* 121, no. 2: 225–247.

²¹ Margaret A. Boden, *Mind as Machine: A History of Cognitive Science*, Volume 1 (Oxford: Oxford University Press, 2006), 102–104.

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- ²² John Leach, “Psychological factors in exceptional, extreme and torturous environments,” *Extreme Physiology and Medicine* 5 (June 1, 2016), <https://extremephysiolmed.biomedcentral.com/articles/10.1186/s13728-016-0048-y>.
- ²³ Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society* (Boston: Houghton Mifflin, 1954), 50.
- ²⁴ Peter Galison, “The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision,” *Critical Inquiry* 21 (Autumn 1994): 236.
- ²⁵ In *The Human Use of Human Beings*, Wiener discussed cybernation as what would potentially happen with new forms of automated technologies—namely the social impacts and phylogenetic changes that ongoing feedback with machine intelligence would facilitate. In *The Cult of Information*, Theodore Roszak describes a “personality cult” that grew with the emergence of the computer and its subsequent cybernation of everyday life of the “Information Age.” The cyber- and info- catchphrases, and world-making clichés of the “information age,” for example, are to engineer a widespread cult, which like all cults, “has the intention of enlisting mindless allegiance and acquiescence.” See Theodore Roszak, *The Cult of Information: A Neo-Luddite Treatise on High-Tech, Artificial Intelligence, and the True Art of Thinking* (Berkeley, Los Angeles, London: University of California Press, 1994/1986), x and 9–11. Another helpful read on this subject (although without addressing it as “cybernation”) is the dissertation of Benjamin Peters (progeny of John Durham Peters) on cybernetics. See Benjamin Peters, *From Cybernetics to Cyber Networks: Norbert Wiener, the Soviet Internet, and the Cold War Dawn of Information Universalism*, PhD diss., Columbia University, 2010, <https://www.proquest.com/openview/44f0bf9821f7f3e580b12d6f3eb598ab/1?pq-origsite=gscholar&cbl=18750>.
- ²⁶ Galison, “The Ontology of the Enemy,” 229.
- ²⁷ Wiener, *The Human Use of Human Beings*, 57.
- ²⁸ E.O. Wilson, interviewed by Frans Roes, Harvard University, Cambridge, MA, March 27, 1997, <http://www.froes.dds.nl/WILSON.htm>.
- ²⁹ Wiener, *The Human Use of Human Beings*, 51.
- ³⁰ Wiener, *The Human Use of Human Beings*, 51, 54, and 57.
- ³¹ Wiener, *The Human Use of Human Beings*, 57.
- ³² Norbert Wiener, *Invention: The Care and Feeding of Ideas* (Cambridge, MA: The MIT Press, 1993), 141.
- ³³ Wiener, *The Human Use of Human Beings*, 47. Emphasis is mine.
- ³⁴ Audre Lorde, “The Master’s Tools Will Never Dismantle the Master’s House,” *Sister Outsider: Essays and Speeches* (Berkeley: Crossing Press, 1984), 110–114.
- ³⁵ Tiqqun, *The Cybernetic Hypothesis*, trans. Robert Hurley (South Pasadena: Semiotext(e), 2020), 16. The term Tiqqun uses is “anthropotechnology,” but the idea is the same: the use of cybernetics as social experiment and apparatus of experimental technologies for social control.
- ³⁶ Heims, “Introduction,” in Wiener, *Invention*, xii.
- ³⁷ For example, and to varying degrees and ambivalences: Tiqqun; Pfohl; Donna J. Haraway, “The Biological Enterprise: Sex, Mind, and Profit from Human Engineering to Sociobiology” (1979), in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), 44–45; Donna J. Haraway, “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century,” in *Simians, Cyborgs, and Women*, 149–182; Galloway; Heims, *John von Neumann and Norbert Wiener*; Galison, “The Ontology of the Enemy”; etc. Wiener is caricatured as intellectually myopic, but in fact, he championed interdisciplinarity and transdisciplinarity. For one example, see his formative role with the Research Laboratory of Electronics (RLE) at MIT (in Building 20); discussed in Erika Biddle, “Room for Learning: Adapt, Transform, Transgress” (unpublished essay, 2020).
- ³⁸ See Galison, “The Ontology of the Enemy.”
- ³⁹ Norbert Wiener, *I am a Mathematician: The Later Life of a Prodigy* (New York: Doubleday, 1956), 295.
- ⁴⁰ Wiener, *The Human Use of Human Beings*, 162.
- ⁴¹ Norbert Wiener, *God and Golem, Inc.* (Boston: MIT Press, 1964), 28 and 69.
- ⁴² Wiener, *God and Golem, Inc.*, 54.
- ⁴³ William S. Burroughs, *Naked Lunch* (New York: Grove Weidenfeld, 1959), 148–149.
- ⁴⁴ Norbert Wiener, *The Human Use of Human Beings* (Cambridge, MA: The Riverside Press, 1950), 16.

⁴⁵ Flo Conway and Jim Siegelman, *Dark Hero of the Information Age: In Search of Norbert Wiener, the Father of Cybernetics* (New York: Basic Books, 2004). This book contains a wealth of material that was previously underreported and/or unpublished. Will fortify with a visit to the Wiener archives at MIT in a future version of this work.

⁴⁶ See Slava Gerovitch, “Love-Hate for Man-Machine Metaphors in Soviet Physiology: From Pavlov to ‘Physiological Cybernetics,’” *Science in Context* 15, no. 2 (June 2002): 339–374; Slava Gerovitch, *From Newspeak to Cyberspeak: A History of Soviet Cybernetics* (Cambridge, MA and London: The MIT Press, 2002); Conway and Siegelman, *Dark Hero*.

⁴⁷ Conway and Siegelman, *Dark Hero*.

⁴⁸ J.P. Schadé, in *Progress in Brain Research 17: Cybernetics of the Nervous System*, ed. Norbert Wiener and J.P. Schadé (Amsterdam/London/New York: Elsevier Publishing Company, 1965), 8.

⁴⁹ [NYT] Ed., “Dr. Norbert Wiener Dead at 69; Known as Father of Automation,” *The New York Times*, March 19, 1964: 1, <https://www.nytimes.com/1964/03/19/archives/dr-norbert-wiener-dead-at-69-known-as-father-of-automation.html>.

⁵⁰ Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago and London: The University of Chicago Press, 2006), 28.

⁵¹ Sloan Wilson, *The Man in the Grey Flannel Suit* (London: Cassell and Company Ltd., 1956), back cover copy.

⁵² Norbert Wiener, “A Scientist Rebels,” *The Atlantic* (January 1947), <https://cdn.theatlantic.com/media/archives/1947/01/179-1/132381596.pdf>. This article is included in the Appendix of later editions of *The Human Use of Human Beings*.

⁵³ In social histories of postwar medicine, and specifically in the archives of the Osler Library at McGill University, Montreal, are studies on postwar public mental health, in particular, its relational and epigenetic impact on generations and publics. For a small sampling: Carol Schultz Vento, *The Hidden Legacy of World War II: A Daughter’s Journey of Discovery* (Mechanicsburg: Sunbury Press, 2011); Kjersti Ericsson and Eva Simonsen (eds.), *Children of World War II: The Hidden Enemy Legacy* (New York: Berg Publishers, 2005); Rachel Yehuda and Amy Lehrner, “Intergenerational transmission of trauma effects: putative role of epigenetic mechanisms,” *World Psychiatry* 17, no. 3 (October 2018): 243–257.

⁵⁴ The latter is the title of George Beard’s definitive work on neurasthenia. See George Beard, *American Nervousness, its Causes and Consequences: A Supplement to Nervous Exhaustion (Neurasthenia)* (New York: G. P. Putnam’s Sons, 1881).

⁵⁵ Julie Beck, “‘Americanitis’: The Disease of Living Too Fast,” *The Atlantic*, March 11, 2016, <https://www.theatlantic.com/health/archive/2016/03/the-history-of-neurasthenia-or-americanitis-health-happiness-and-culture/473253/>.

⁵⁶ Dr. John Harvey Girdner, *Newyorkitis* (New York: The Grafton Press, 1901), x.

⁵⁷ Fred Turner discusses this relationality as viral within the counterculture, along with systems theory. He writes, “Like Norbert Wiener two decades earlier, many in the counterculture saw in cybernetics a vision of a world not built around vertical hierarchies and top-down flows of power, but around looping circuits of energy and information. These circuits presented the possibility of a stable social order based not on the psychologically distressing chains of command that characterized military and corporate life, but on the ebb and flow of communication.” See Turner, *From Counterculture to Cyberculture*, 38.

⁵⁸ William Lockett, “Cybernetic Child Psychology: A Genealogy of the User,” PhD diss., Department of Media, Culture, and Communication, Steinhardt School of Culture, Education and Human Development, New York University, 2019,

<https://media.proquest.com/media/hms/PFT/2/fbqqB?s=Q2F3Y6hRdZvGladnbFWm2p0FM0s%3D>.

⁵⁹ John B. Watson, “Influencing the Mind of Another,” speech delivered to the Montreal Advertising Club, September 26, 1935 [reprint], John Broadus Watson Papers. See Peggy J. Kreshel, “John B. Watson at J. Walter Thompson: The Legitimation of ‘Science’ in Advertising,” *Journal of Advertising* 19, no. 2 (1990): 49–59.

⁶⁰ Jodie Nicotra, *The Force of Habit: Rhetoric, Repetition, and Identity from Darwin to Drugs*, PhD. Diss, The Pennsylvania State University, The Graduate School, College of the Liberal Arts (August 2005), https://etda.libraries.psu.edu/files/final_submissions/2516.

⁶¹ Tony Sampson, “Digital Neuroland: An Interview with Tony D. Sampson by Rizosfera Collective,” July 2017, <http://obsoletecapitalism.blogspot.com/2017/08/digital-neuroland-interview-with-tony-d.html?spref=fb> and <https://viralcontagion.blog/tag/rizosfera-collective/>.

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- ⁶² Watson and Watson, *Psychological Care of Infant and Child* (1928), 72.
- ⁶³ See Nicotra, *The Force of Habit*.
- ⁶⁴ Franz Samelson speculates that Watson's turn to working on human subjects—exclusively—in 1916 might have been inspired, at least in part, with hearing John Dewey's 1916 APA address "The Need for Social Psychology," which "linked social control and behaviorism to a 'progressive' environmentalism." See Franz Samelson, "Struggle for Scientific Authority: The Reception of Watson's Behaviorism, 1913–1920," *Journal of the History of the Behavioral Sciences* 17 (1981): 399–425.
- ⁶⁵ Watson and Watson, *Psychological Care of Infant and Child* (1928), 153.
- ⁶⁶ John B. Watson, "A Schematic Outline of the Emotions," *Psychological Review* 26, no. 3 (1919): 165–196.
- ⁶⁷ Kerry W. Buckley, "The Selling of a Psychologist: John Broadus Watson and the Application of Behavioral Techniques to Advertising," *Journal of the History of the Behavioral Sciences* 18 (July 1982): 207.
- ⁶⁸ John B. Watson, *Behavior* (1915), 49.
- ⁶⁹ John B. Watson, "Should a Child Have More Than One Mother?," *Liberty*, June 1929: 31–35. The article is often referred to as John B. Watson's outline for a "behaviorist utopia," and expanded on ideas he developed [collaboratively with Rayner Watson] in *Psychological Care of Infant and Child* for improving social relations in American society with behaviorist science: children with disabilities should be euthanized and those who display behaviors that cannot be reconditioned can be put to death; women with undesirable qualities should not be allowed to breed; parental affection spoils/ruins children; breastfeeding should be outlawed; conventional family relations were responsible for creating lazy, dependent, unhappy, and neurotic children; childcare should be administered by behavioral scientists. In *Psychological Care of Infant and Child*, Watson writes, "The doctors [i.e., behaviorists] in Utopia have the most important role in rearing children. And even further, Watson "advocated the funding of an experimental nursery that would lead to the establishment of 'infant laboratories' in the public school system. In this way mothers of preschool children 'could be guided and warned about the way the children were tending to develop,' and could receive 'expert guidance and intelligent help.' The laboratories would also be used to train teachers in child behavior." See Buckley, "The Selling of a Psychologist," 209.
- ⁷⁰ John B. Watson, "Recent experiments on how we lose and change our emotional equipment," in *Psychologies of 1925: Powell Lectures in Psychological Theory*, ed. C. Murchison (Worcester: Clark University Press, 1926), 59–81.
- ⁷¹ Kerry W. Buckley, *Mechanical Man: John B. Watson and the Beginnings of Behaviorism* (New York: The Guilford Press, 1989), 115.
- ⁷² John B. Watson, "A Schematic Outline of the Emotions," 169.
- ⁷³ This experiment was in fact his final research project at Johns Hopkins. Best known as "the Little Albert experiment" or "Albert B. Study," its formal title is "Conditioned Emotional Responses" (Watson and Rayner 1920). In a 1925 article, Watson reveals that the Albert B. study ended not with his firing from Johns Hopkins, but because the child was adopted by an out-of-town family and was thus no longer available as a subject for experimentation. See John B. Watson, "Recent Experiments on How We Lose and Change Our Emotional Equipment," *The Pedagogical Seminary and Journal of Genetic Psychology* 32, no. 2 (1925): 349–371.
- ⁷⁴ Watson and Watson, *Psychological Care of Infant and Child*, 97.
- ⁷⁵ Watson and Watson, *Psychological Care of Infant and Child*, 77.
- ⁷⁶ Watson and Watson, *Psychological Care of Infant and Child*, 77.
- ⁷⁷ Watson and Watson, *Psychological Care of Infant and Child*, 76.
- ⁷⁸ Mariette Hartley and Anne Commire, *Breaking the Silence* (New York: G. P. Putnam's Sons, 1990), 43.
- ⁷⁹ John B. Watson, *Psychological Care of Infant and Child*, 12.
- ⁸⁰ Buckley, *Mechanical Man*, 211.
- ⁸¹ John B. Watson, qtd in Peggy J. Kreshel, "John B. Watson at J. Walter Thompson: The Legitimation of 'Science' in Advertising," *Journal of Advertising* 19, no. 2 (1990): 49–59.
- ⁸² Buckley, "The Selling of a Psychologist," 215.
- ⁸³ Watson, "Recent Experiments on How We Lose and Change Our Emotional Equipment," 362.
- ⁸⁴ John B. Watson, "The Unconscious of the Behaviorist," in E.S. Drummer (ed.), *The Unconscious: A Symposium* (New York: Knopf, 1928). I think 'the body that heals its own wounds' is a reference to or paraphrasing of Wilder Penfield.
- ⁸⁵ See Buckley, "The Selling of a Psychologist," 207–221.

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- ⁸⁶ Jussi Parikka describes the constructive work of “cultural techniques of cognitive capitalism” as the following: “cultural techniques participate in the formation of subjects, as well as constitute ways of knowing and organising social reality.” See Jussi Parikka, “Cultural Techniques of Cognitive Capitalism: Metaprogramming and the Labour of Code,” *Cultural Studies Review* 20, no. 1 (March 2014): 30.
- ⁸⁷ Aldous Huxley, *Brave New World Revisited* (New York: Harper Perennial Modern Classics, 2006/1958), 102. From colophon of this edition: “Most of the material in this book was published by *Newsday* under the title *Tyranny over the Mind*.”
- ⁸⁸ Penfield Fonds, Folder II: WP-CTEE 0.64 Canadian Liaison Reports Secret. Note, “*Times*” refers to the British daily national paper *The Times*.
- ⁸⁹ William Van der Kloot, “Mirrors and Smoke: A. V. Hill, His Brigands, and the Science of Anti-Aircraft Gunnery in World War I,” *Notes and Records of the Royal Society* 65, no. 4 (2011): 393–410, doi:10.1098/rsnr.2010.0090.
- ⁹⁰ David R. Bassett, Jr., “Scientific Contributions of A. V. Hill: exercise physiology pioneer,” *Journal of Applied Physiology* 93 (2002): 1567–1582, 10.1152/jappphysiol.01246.2001.
- ⁹¹ See Major Julius Schreiber, “Morale Aspect of Military Mental Hygiene,” 1943. Penfield Fonds, Box 198a, WP-CTEE 2.1-2.12. Also see, FOLDER II: Neuropsychiatry: Committee of Medical Research (CMR) USA WP-CTEE 2.10.
- ⁹² NRC, Div Medical Sciences, Comm on Medical Research, Conference on Group Therapy, November 1, 1944, RESTRICTED. Penfield Fonds, Box 198a WP-CTEE 2.1-2.12, Folder II: Neuropsychiatry: Committee of CMR USA WP-CTEE 2.10.
- ⁹³ Lisa Cartwright and Brian Goldfarb, “On the Subject of Neural and Sensory Prostheses,” in *The Prosthetic Impulse*, ed. Maquard Smith and Joanne Morra (Cambridge, MA and London: The MIT Press, 2006), 127.
- ⁹⁴ Andrew Pickering, *The Cybernetic Brain: Sketches of Another Future* (Chicago and London: The University of Chicago Press, 2010), 71.
- ⁹⁵ Pickering, *The Cybernetic Brain*, 71.
- ⁹⁶ For the purpose of maintaining scale in this dissertation, Grey Walter’s work will be discussed in a limited sense, a necessary choice which unfortunately disincludes a lot of interesting work around his “swashbuckling” and “consciousness-altering” experimental neurophysiological research with flicker technologies, and more generally, with neurophysiologists working in the US and elsewhere. He was known as a “maverick” and a prominent public intellectual in 1950s–1970s Britain, but apparently, “[d]espite his leading role in the clinical and commercial development of EEG during World War II, Walter’s maverick reputation ensured his continuing alienation from the scientific establishment.” See Rhodri Hayward, “The Tortoise and the Love Machine: Grey Walter and the Politics of Electroencephalography,” *Science in Context* 14, no. 4 (2001): 616.
- ⁹⁷ Grey Walter, *The Living Brain*, 9.
- ⁹⁸ Grey Walter, *The Living Brain*, 39 and 41.
- ⁹⁹ Grey Walter, *The Living Brain*, 81.
- ¹⁰⁰ Grey Walter, *The Living Brain*, 107 and 108.
- ¹⁰¹ Grey Walter, *The Living Brain*, 135 and 178.
- ¹⁰² Grey Walter, *The Living Brain*, 145.
- ¹⁰³ Grey Walter, *The Living Brain*, 181.
- ¹⁰⁴ Hayward, “The Tortoise and the Love Machine,” 624 and 626. Minor modification for tense.
- ¹⁰⁵ Grey Walter, *The Living Brain*, 193.
- ¹⁰⁶ Hayward, “The Tortoise and the Love Machine,” 628.
- ¹⁰⁷ Pickering, *The Cybernetic Brain*, 142.
- ¹⁰⁸ Grey Walter, *The Living Brain*, 184.
- ¹⁰⁹ Grey Walter, *The Living Brain*, 147, 157, and 160.
- ¹¹⁰ Grey Walter, *The Living Brain*, 164.
- ¹¹¹ Grey Walter, *The Living Brain*, 185.
- ¹¹² Grey Walter, *The Living Brain*, 183.
- ¹¹³ Grey Walter, *The Living Brain*, 192.
- ¹¹⁴ Grey Walter, *The Living Brain*, 64.

¹¹⁵ The Human Ecology Fund (HEF), what the SIHE was called from 1961 onward, was overseen by Cornell University Medical School neurologist Dr. Harold Wolff. It secretly financed a broad range of social and behavioral science research undertaken by anthropologists, sociologists, psychologists, medical researchers, and others in the Cold War era. See David H. Price, *Cold War Anthropology: The CIA, the Pentagon, and the Growth of Dual Use Anthropology* (Durham: Duke University Press, 2016), 197.

¹¹⁶ See Survivors Allied Against Government Abuse (SAAGA), “Offenders,” <https://www.saaga.info/offenders>. SAAGA is an ongoing class-action lawsuit against the Royal Victoria Hospital, McGill University Health Centre, the Attorney General of Canada and the United States Attorney General on behalf of individuals who underwent “depatterning and repatterning” treatments at the Allan Memorial Institute in Montreal, Quebec, between 1948–1964, also known as the “Montreal Experiments.”

¹¹⁷ For example, QAnon Anonymous, “Premium Episode 62: MK ULTRA & Operation Midnight Climax,” February 12, 2020, <https://podcasts.apple.com/ca/podcast/qanon-anonymous/id1428209307?i=1000465425485>.

¹¹⁸ Donald Ewen Cameron, “Psychic Driving,” *American Journal of Psychiatry* 112, no. 7 (January 1956): 502–509; Donald Ewen Cameron, Leonard Levy, Leonard Rubenstein, R.B. Malmö, “Repetition of Verbal Signals: Behavioural and Physiological Changes,” *American Journal of Psychiatry* 115, no. 11 (1959): 985–991; Don Gillmor, *I Swear by Apollo: Dr. Ewen Cameron and the CIA-Brainwashing Experiments* (Montreal: Eden Press, 1987); Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (New York: Metropolitan Books, 2007), 34–36.

¹¹⁹ Klein, *The Shock Doctrine*; Harvey Weinstein, *Father, Son and CIA* (Toronto: James Lorimer & Company, 1988).

¹²⁰ Klein, *The Shock Doctrine*, 31.

¹²¹ See, for example, the CBC’s coverage on the ongoing lawsuits: Siddhartha Banerjee, “U.S. argues for immunity in MK-ULTRA mind control case before Quebec Court of Appeal,” *CBC News*, March 20, 2023, <https://www.cbc.ca/news/canada/montreal/quebec-court-of-appeal-mk-ultra-1.6796756>; “Class action suit by families of those brainwashed in Montreal medical experiments gets go-ahead,” *CBC News*, March 3, 2022, <https://www.cbc.ca/news/canada/montreal/class-action-lawsuit-families-montreal-brainwashing-mk-ultra-1.6371416>; Michelle Shephard, Lisa Ellenwood, and Chris Oke, “Brainwashed: The echoes of MK-ULTRA,” *CBC*, October 21, 2020, <https://newsinteractives.cbc.ca/longform/brainwashed-mkultra/>.

¹²² Norman Ohler, *Blitzed: Drugs in Nazi Germany*, trans. Shaun Whiteside (New York and London: Penguin Books Ltd., 2016), 239.

¹²³ Ohler, *Blitzed*, 240.

¹²⁴ CIA–Inspector General Report on Inspection of MK ULTRA, July 26, 1963, <https://publicintelligence.net/cia-ig-mkultra/>. Sometimes the experiments were uncontrolled, sometimes they were carried out under hypercontrolled clinical conditions with the full supervision of medical professionals, such as with cancer and other terminally ill patients in Georgetown (1946–1974) or Dr. Donald Ewen Cameron at the Allan Memorial Institute in Montreal (1943–1964). Cameron’s experimental work on human subjects during his tenure at the AMI has been the subject of critical public scrutiny for some time—e.g., John Marks’ *The Search for the “Manchurian Candidate”* (1979); Anne Collins’ *In the Sleep Room* (1988); Alfred W. McCoy’s *A Question of Torture: CIA Interrogation, from the Cold War to the War on Terror* (2006); Naomi Klein’s *Disaster Capitalism* (2007); Rebecca Lemov’s “Brainwashing’s Avatar: The Curious Career of D. Ewen Cameron” (2011); Alain Farah’s *Ravenscrag: A Novel* (2013/ Engl. tr. 2015); the CBC News six-part podcast series “Brainwashed: The echoes of MK-ULTRA” (2020); Netflix’s ongoing sci-fi series *Stranger Things*, and across more than several works of documentary filmmaker Adam Curtis over the past three decades.

¹²⁵ J.G. Ballard, “Fictions of Every Kind,” in *Books and Bookmen* (February 1971), https://www.jgballard.ca/non_fiction/jgb_fictions.html.

¹²⁶ Huxley, *Brave New World Revisited*, 24–25.

¹²⁷ Most of Huxley’s *Brave New World Revisited* was first published as *Tyranny Over the Mind: A Shocking New Look at Today’s World*, which appeared as a 24-page supplement to Long Island’s *Newsday*, a daily suburban newspaper, on May 31, 1958.

¹²⁸ Aldous Huxley, “The Ultimate Revolution,” public speech delivered at Berkeley Language Center, UC Berkeley, March 20, 1962, <https://publicintelligence.net/aldous-huxley-1962-u-c-berkeley-speech-on-the-ultimate-revolution/>.

¹²⁹ In August and September 1977, several articles were published in prominent newspapers, such as *The New York Times* and *The Washington Post*. See, for one example, “Mind-Control Studies Had Origins in Trial of Mindszenty,” *The New York Times*, August 2, 1977, 16.

¹³⁰ “The contribution of cybernetics to our self-knowledge and self-control has been almost imperceptible. This is not because there has been no contribution; rather, the influence of cybernetic attitudes has been so subtle and pervasive that it has permeated the whole atmosphere of theory and technique. We must acknowledge that this atmosphere is not uniformly salubrious. In 1947 Wiener admitted that he had only a ‘very slight hope’ that the good effects of cybernetics would ‘anticipate and outweigh the incidental contribution-to the concentration of Power, in the hands of the most unscrupulous.’ Twenty-two years later we cannot honestly feel more optimistic.” See William Grey Walter, “The past and future of cybernetics in human development,” in *Progress of Cybernetics, Volume 1*, ed. J. Rose, Blackburn College of Technology and Design, Proceedings of the First International Congress of Cybernetics (London: Gordon and Breach, 1970).

¹³¹ In *The Significance of the Montreal Neurological Institute* no. 68, reprinted from *Neurological Biographies & Address—The Foundation Volume which was Published for the Staff to Commemorate the Opening of the Montreal Neurological Institute of McGill University on 27 September 1934*,

https://digital.library.mcgill.ca/images/penfieldfonds/large/pen_e_k_34_9_27_item02.pdf.

¹³² See “MUHC at a glance,” <https://muhc.ca/muhc-glance>.

¹³³ Don Gillmor, *I Swear by Apollo: Dr. Ewen Cameron and the CIA-Brainwashing Experiments* (Montreal: Eden Press, 1987), 45.

¹³⁴ Ed Bradley, “MK-ULTRA/Mind Control Experiments,” *60 Minutes* [transcript], WDVM-TV, CBS Network, Washington, DC, December 23, 1984, <https://www.cia.gov/readingroom/docs/CIA-RDP88-01070R000301530003-5.pdf>.

¹³⁵ According to a former patient, Dr. Cameron used “67 times the average dose of electric current by pushing the button of the electroshock machine six times in succession rather than one. And besides that, instead of getting it two or three times a week once, one press of a button, like most physicians do, he gave it in daily successions.” See Select Committee on Intelligence and Committee on Human Resources, United States Senate, Ninety-Fifth Congress, First Session, August 3, 1977, <https://www.cia.gov/readingroom/docs/CIA-RDP88-01070R000301530003-5.pdf>.

¹³⁶ Testimony of one of Dr. Cameron’s former experimental subjects, Dr. Mary Morrow. See Select Committee on Intelligence and Committee on Human Resources, United States Senate, Ninety-Fifth Congress, First Session, August 3, 1977, <https://www.cia.gov/readingroom/docs/CIA-RDP88-01070R000301530003-5.pdf>.

¹³⁷ Testimony of Dr. Harvey Weinstein. See Select Committee on Intelligence and Committee on Human Resources, United States Senate, Ninety-Fifth Congress, First Session, August 3, 1977, <https://www.cia.gov/readingroom/docs/CIA-RDP88-01070R000301530003-5.pdf>.

¹³⁸ Gillmor, *I Swear by Apollo*, 46.

¹³⁹ Gillmor, *I Swear by Apollo*, 56–57.

¹⁴⁰ Donald Ewen Cameron, “Psychic Driving,” *American Journal of Psychiatry* 112, no. 7 (January 1956): 508.

¹⁴¹ Pau Erickson, Judy L. Klein, Lorraine Daston, Rebecca Lemov, Thomas Sturm, and Michael D. Gordin, *How Reason Almost Lost Its Mind: The Strange Career of Cold War Rationality* (Chicago and London: The University of Chicago Press, 2013), 159.

¹⁴² Tiqqun, *Cybernetic Hypothesis*, 53.

¹⁴³ Critical Art Ensemble, “Introduction: Hidden Histories and Conspiratorial Narratives,” in Kevin C. Pyle, *Lab U.S.A. Illuminated Documents* (Brooklyn, Autonomedia, 2001), 7.

¹⁴⁴ Franco “Bifo” Berardi, *The Second Coming* (Cambridge, UK and Malden, MA: Polity, 2019), 75.

¹⁴⁵ In *The Mechanical Bride*, McLuhan writes: “It is no longer is it possible for modern man, individually or collectively, to live in any exclusive segment of human experience or achieved social pattern. The modern mind, whether in its subconscious collective dream or in its intellectual citadel of vivid awareness, is a stage on which is contained and re-enacted the entire experience of the human race. There are no more remote and easy perspectives, either artistic or national. Everything is present in the foreground. That fact is stressed equally in current physics, jazz, newspapers, and psychoanalysis. And it is not a question of preference or taste. This flood has already immersed us. And whether it is to be a benign flood, cleansing the Augean stables of speech and experience, as envisaged in Joyce’s *Finnegans Wake*, or a merely destructive element, may to some extent depend on the degree of exertion and direction which we elicit in ourselves.” See Marshall McLuhan, *The Mechanical Bride*, 87.

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- ¹⁴⁶ See McLuhan and Fiore, *The Medium is the Massage*, 63.
- ¹⁴⁷ McLuhan and Fiore, *The Medium is the Massage*, 25.
- ¹⁴⁸ McLuhan, *The Mechanical Bride*, 87.
- ¹⁴⁹ Invisible Committee, *To Our Friends* (2014), trans. Robert Hurley (South Pasadena: Semiotext(e), 2015), 104.
- ¹⁵⁰ This definition of *souci* is from Martin Joughin's translator notes for Deleuze's *Negotiations*, 202.
- ¹⁵¹ Gilles Deleuze, "Politics," *Schizo-Culture* (New York: Semiotext(e), 1976), 162.
- ¹⁵² Jordan Torbay, "The work of Donald Ewen Cameron: from psychic driving to MK Ultra," *History of Psychiatry* 34, no. 3 (2023): 326.
- ¹⁵³ Donald Ewen Cameron, "Psychic driving: dynamic implant," *The Psychiatric Quarterly* 31 (January 1957): 703–712.
- ¹⁵⁴ For one example, Luke Stark has written extensively about how "*emotion in the world of computational media has become big business*." Luke Stark, "The emotive politics of digital mood tracking," *New Media & Society* 22, no. 11 (2020): 2039.
- ¹⁵⁵ Stephen Pfohl, "The Cybernetic Delirium of Norbert Wiener," in *Digital Delirium*, ed. Arthur and Marilouise Kroger (Montreal: New World Perspectives, 2001), 114 and 118.
- ¹⁵⁶ Gilles Deleuze, "Postscript on the Societies of Control," *October* 59 (Winter 1992): 3–7.
- ¹⁵⁷ Frederic Jameson, qtd. by Mark Fisher, in *Capitalist Realism: Is There No Alternative?* (Hants: Zero Books, 2009), 54.
- ¹⁵⁸ Tero Karppi et al., "Affective capitalism: Investments and investigations," *ephemera: theory and politics in organization* 16, no. 4 — Affective capitalism special issue (November 2016): 1–13, <https://ephemerajournal.org/index.php/contribution/affective-capitalism-investments-and-investigations>.
- ¹⁵⁹ "Reality Studio" is what William S. Burroughs called the everyday, conditioned, mind-controlled reality of postwar American publics. See Lee Konstantinou, "William S. Burroughs' Wild Ride with Scientology," *Gizmodo*, May 11, 2011, <https://gizmodo.com/203illiam-s-burroughs-wild-ride-with-scientology-5800673>.
- ¹⁶⁰ Tony D. Sampson, "Machine-Functioning Neuroculture: Methods for Critiquing Neuroscientific Interventions in Art and Philosophy," in *An Activist Neuroaesthetics Reader*, ed. Warren Neidich (Berlin: Archive Books, 2021), 341.
- ¹⁶¹ See, for one example, DARPA's growing list of current and ongoing research projects involving the human nervous system: <https://www.darpa.mil/program/our-research/darpa-and-the-brain-initiative>.
- ¹⁶² Klein, *The Shock Doctrine*, 21.
- ¹⁶³ Critical Art Ensemble, *Lab U.S.A.*, 8.
- ¹⁶⁴ Conway and Siegelman, *Dark Hero*, 173.
- ¹⁶⁵ Orit Halpern, *Beautiful Data: A History of Vision and Reason since 1945* (Durham and London: Duke University Press, 2014), 3.
- ¹⁶⁶ Franco "Bifo" Berardi, "The Second Coming," *e-flux journal* 83 (June 2017), <https://www.e-flux.com/journal/83/142355/the-second-coming/>. Published as a book by Polity in 2009.
- ¹⁶⁷ Franco "Bifo" Berardi, *The Second Coming* (Cambridge, UK and Malden, MA: Polity, 2019), 34–35.
- ¹⁶⁸ Berardi, *The Second Coming*, 12–13.
- ¹⁶⁹ Berardi, *The Second Coming*, 91.
- ¹⁷⁰ See Berardi, *The Second Coming*, 90 and 95–96.

**SOFT MACHINES WITH PLASTIC POTENTIAL:
WILLIAM S. BURROUGHS AND THE CONTROL DIAGRAM**

WILLIAM BURROUGHS: You can also say that all neurosis comes down to discrepancies between the conscious intellect and the automatic nervous system—someone may consciously despise a policeman and yet still be nervous in his presence. They can't control this automatic reaction to an authority figure, but it can be erased. . . .

FELIX STADLER: A lot of people would prefer to erase the policeman.

WILLIAM BURROUGHS: You erase one, there are others, an inexhaustible supply. But when you erase your involuntary subservience to authority, the extreme manifestations of authority lose their power to affect you.¹

Preamble

In her 1966 review of William Burroughs' *The Soft Machine*, Joan Didion astutely observes that “a book by William Burroughs has about as much intrinsic ‘meaning’ as the actual inkblot in a Rorschach test.” Instead of the impossible, tedious, entirely subjective task of reading Burroughs—in particular, a “cut up” text—she suggests engaging Burroughs as a medium, in the McLuhan sense:

In a quite literal sense with Burroughs, the medium *is* the message: the point is not what the voice says but the voice itself, a voice so direct and original and versatile as to disarm close scrutiny of what it is saying. Burroughs is less a writer than a ‘sound,’ and to listen to the lyric may be to miss the beat. . . . It is precisely this voice—complex, subtle, allusive—that is the fine thing about *The Soft Machine* and about Burroughs. It is hard, derisive, inventive, free, funny, serious, poetic, indelibly American, a voice in which one hears transistor radios and old movies and all the cliches and all the cons and all the newspapers, all the peculiar optimism, all the failure.²

I think this is significant part of what draws people to Burroughs as a radical cartographer and as a sensitive perceptual instrument to navigate the complex problems and traumas, failures and optimism of “societies of control.” Didion is, in this sense, correct to assess Burroughs as sound, the physical vibrations generated and transmitted as waves of energy through our nervous systems. Burroughs himself said that same year, in the essay “Invisible Generation” (1966), “what we see is determined to a large extent by what we hear.”³ From a psycholinguistic perspective, Burroughs’ prosody exposes how capitalism’s power and reach have infiltrated all of ‘us’ by extension over all aspects of social, economic, and cultural life as well as by ‘intension’ into unconscious subjective strata.⁴ If you’re looking to learn about and understand forces that work with technological authority upon affect—that understands control as social-before-it-is-technological constitutive power that takes different forms, among them “mass,” “viral,” and “plastic”—it makes good sense to turn to William S. Burroughs. Like McLuhan’s project with *Understanding Media*, Burrough’s project is to “provide ways of discerning these lines of force, these currents not of opinion but of perception.”⁵

We have discussed how the formation of publics was at one time taken as a time-consuming process of mutual enlightenment through the work and effort of dialogic conversation and ‘thinking with’ others—private pursuits publicly protected from the pressures of acknowledgment, approval, the concerns or interests of market-driven power structures. By the mid-twentieth century, a wide array of cybernetic tools emerged with intent to manipulate, control, and reproduce “the public mind” and to manage subjectivities more efficiently, more expansively than ever before. In a 1964 review of Burroughs’ *Naked Lunch* and *Nova Express*—the same year *Understanding Media* was published—McLuhan assesses Burroughs’ work in terms of its understanding of and potential use against the imminent and immanence problems of the contemporary technologically connective environment, an effect of inhabiting a psychic and social “world in which we have made our environment out of our own nervous system” and how it was being bioweaponized, for example, as an art of total programming and anxious omniscience.

This text, mostly composed as a series of notes, first appeared in *The Nation* as “Notes on Burroughs.” In it, McLuhan articulates how with networked technologies, a form of collective consciousness has emerged: “We have made our environment out of our own nervous systems.”

In a world in which we exist by cannibalism—by ingesting and digesting one another semiotically—there can be no obscenity or pornography or decency. “Such is the law of electric media which stretches the nerves to form a global membrane of enclosure.”⁶ Everyone, in this relational model of biopower, in which the relation between language and power is “control,” becomes a vibrational vector and agent of plastic potential. As Huxley wrote in 1932, in this model of global control, “Every One Belongs to Every One Else.”⁷

Working on this chapter—returning to it—shortly after Russia’s invasion of Ukraine, with the renewed scrutiny of propagandistic fake news and intentional dissembling of facts from state-owned “firehoses of falsehoods”—e.g., outlets RT and Sputnik, and troll factories like the Internet Research Agency—as well as of the agency of social media platforms, overwhelmingly US-centric corporations that have for years dominated global media flows.⁸ The potential for bad actors to manipulate and take control of language, to shape perceptions, to become viral, to consume reality and subjectivity, to create tunnels connecting minds in an informational vacuum in order to control and subjugate, is something Burroughs was uniquely attuned to. In the third consecutive year of the COVID-19 pandemic, with its attendant misinformation and targeted erosion of public trust, facticity, and sense-making faculties—occurring simultaneously with Big Tech’s push to integrate generative AI into all of its products—it is tempting to look to Burroughs’ texts for his theorization of word viruses and how they work, to understand what affects arise from sustained cognitive attacks and disinformation wars, what tools are used to surveil, manipulate, and block access to information “reality” and informed freedom. Burroughs’ aim was practical, and he developed an arsenal of prosodic and attentional counter weapons to rub out words, to “change fact,” and to get past the threshold of info-apocalypse “as it opens up onto the positive potential of difference.”⁹ In this moment, it is very necessary to look for new ways to “cut in” to reality and see what “leaks” out. We will do this here by revisiting Burroughs’ oeuvre, beginning with Deleuze’s intervention with Burroughs into the control diagram.

Deleuze’s very short polemical essay “Postscript on the Societies of Control” is indebted to Burroughs’ concept of control as social-before-it-is-technological constitutive power. Deleuze engages, in particular, Burroughs’ conceptualization of formative energies and ‘the logics and laws of control’—the all-caps “FEEDBACK FROM WATERGATE TO THE GARDEN OF EDEN”

he warned about in *The Electronic Revolution* and elsewhere as the new, media-enabled semiotic, prosodic, and performative apparatus specific to control societies—that even from great distance was always accelerating, always transforming, increasingly destabilizing our sense of time, history, consciousness, social relations, and sense of reality via “cycles of conditioning.” He postulates that language, “the word virus,” could be more deadly than nuclear war, because: “all hate all pain all fear all lust is contained in the word.”¹⁰

Throughout his decades-long project, Burroughs theorized a future in which there are available a panoply of techniques for immediate neuroplastic modulation of global brain activity used in the maintenance of social control. Somehow, in terms of its critical apprehension, this idea remains at the fringe of science fiction and paranoid ideation while it has over time become the unacknowledged condition of everyday life in contemporary capitalism. Burroughs sought to expose a military and religious culture emerging with the singular desire to mind control and program publics. Indeed, a 1977 inquiry into the CIA’s research and experiments in behavioral modification by the US government revealed more than 150 patents in the World War II and postwar period pertaining to: artificial telepathy (voice-to-skull technology), behavior modification through radio frequencies, directed energy weapons, electronic monitoring, implantable nanotechnology, brain wave manipulation, nervous system manipulation, neuroweapons, psychological warfare, satellite terrorism, subliminal messaging, and more.¹¹ Among these “mind control technologies” being developed in the postwar period are wide-ranging tools for behavior modification, nervous system manipulation, hormonal manipulation and other forms of chemical manipulation, energy manipulation, mind manipulation, mental and habitual monitoring, and electronic surveillance. Burroughs saw beyond this a future in which affective conditioning is made possible by affective computing (emotion AI and other affective technologies)—systems that learn to automatically recognize emotions, machine-learning algorithms that can more or less anticipate, communicate with, simulate, modulate, and regulate human subjectivity, with the aim of bio-informationally engineering worlds to destructive ends.

Always concerned with encroaching forms of social and mind control, Burroughs developed an arsenal of aesthetic resistances with the explicit aim of jamming control’s access to attention, cognition, and subjectivity—the entire “storehouse” of affects, memory, and potential.

This included cut-up and fold-in, first as literary techniques and then with sound and film; experimental use of media technologies for amplifying feedback, distortion, and disorientation, to destabilize habits of desensitization and consumption (which returned in malevolent form as click-through culture); flicker technologies to “reprogram” sense-making organs; the performative use of William S. Burroughs, countercultural icon, to explode the world of signs by being simultaneously an extremely savvy mediagenic personality and an alien and inassimilable symbol. Imagine how Burroughs would dominate TikTok today.

Burroughs’ cut-up method was a predigital technique to change reality, by challenging whatever social reality was being served up by control systems, and also, by practicing various forms of deconditioning for unlearning “automatic reactions” that make social control so effective. What this meant, was to learn to learn—to learn to develop a particular awareness of our actions, to see the errors, where we fail and why, how to correct these errors and failures, and make autonomous computations:

Deconditioning means the removal of all automatic reactions deriving from past conditioning . . . all automatic reactions to Queen, Country, Pope, President, Generalissimo, Allah, Christ, Fidel Castro, the Communist Party, the CIA. . . . When automatic reactions are no longer operative you are in a position to make up your mind.¹²

Burroughs’ resistance to power was to “cut up” reality by destabilizing not only everyday language, but also visual images, and later, discourses and memes about art, drugs, sexuality, and control. For example, in the 1970s, in an essay that would become an appendix to *The Ticket That Exploded*, he writes:

get it out of your head and into the machines stop arguing stop complaining
stop talking let the machines argue and complain and talk a tape recorder is
an externalized section of the human nervous system you can find out more
about the nervous system and gain more control over your reactions by using
the tape recorder than you can find out sitting twenty years in the lotus
position or wasting your time on the analytic couch

listen to your present time tapes and you will begin to see who you are and
what you are doing here mix yesterday in with today and hear tomorrow

your future rising out of old recordings you are a programmed tape recorder
set to record and play back

who programs you
who decides what tapes back in present time
who plays back your old humiliations and defeats holding you in prerecorded
preset time

you don't have to listen to that sound you can program your own playback you
can decide what tapes you want played back in present time¹³

As he explains in *The Third Mind* (1978), a cut-up collaboration with artist Brion Gysin, the purpose of the cut-up is to “make explicit a psychosensory process that is going on all the time anyway.”¹⁴ Burroughs develops this technique as early as *Naked Lunch*, where he describes it in phenomenological terms as akin to the experience of the addict undergoing withdrawal:

During the withdrawal the addict is acutely aware of his surroundings. Sense impressions are sharpened to the point of hallucination. Familiar objects seem to stir with a writhing furtive life. The addict is subject to a barrage of sensations external and visceral.¹⁵

Burroughs experienced the world around him—of addiction, Cold War culture, creation, friendship, familial and romantic love, capitalism, war, culture wars, and etc.—as the constant threat of control and the constant need to escape from control.¹⁶ Burroughs' theory of language as a viral technology of social control (that's also capable of biochemical and metabolic regulation on a global scale) augments, overlaps, and connects Michel Foucault's concept of disciplinary power as biopower (in which the will/power to normalize and discipline is constantly transforming along with productive forces) with Gilles Deleuze's societies of control, with their continuous micropractices of coding and reterritorializing that underpin all relations and constitute knowledge economies and attention economies with pernicious energy. This diagram often fails to acknowledge Félix Guattari, particularly his understanding of semiotization and active resistances to it, for example in his schizoanalytic practice. Burroughs' work builds upon this, providing empirical methods for doing the work of becoming conscious of, undoing, and undermining one's own subjectivization, or: HOW TO BREAK FREE OF CONTROL.

Burroughs widely sought avenues to open up the subvocalized and other intensive forms of control to subversion by any means possible, and chief among these antagonists (although it is generally not acknowledged) is the Church of Scientology, an organization that his most prominent works make many explicit references to from the late 1950s through the 1970s (despite Burroughs' ex-communication from the Church in 1969). In *Dianetics*, Hubbard proposes that human intelligence is "dynamic" and that it can plastically adapt and transform, which in Burroughs, becomes experimental technique and his principal critical subject. In his cut-up texts in particular, Burroughs returns often to L. Ron Hubbard's conceptions of "the Reactive Mind," "engram theory," and "running the tapes" (the auditing process). Burroughs' initial work looks to Hubbard's attention to the regulation of brain waves, and how this tool could be put to use as a means for resisting control systems, by "unimaginable extensions of awareness."¹⁷ His later work refocuses as criticism for Scientology as a cult of secrecy, a gnostic enterprise, a model control system. His relationship to Scientology changed when he began to see it as an apparatus of social control and a highly effective biosemiotic technology in the hands of "assholes." In a series of articles in *Mayfair*¹⁸ in the late 1960s primarily, and in popular forms of media more generally, Burroughs began to form a protean concept of control societies, in large part from his experiences within, and yet removed from, the highest echelon of Scientology at its peak popularity.¹⁹

In 1968, Burroughs, succumbing to what Guattari refers to as microfascisms, has almost attained the status of "Clear," which in Scientology is the achievement of "a being who no longer has his own reactive mind, and therefore suffers none of the ill effects the reactive mind can cause. When a person becomes Clear, he loses all the fears, anxieties and irrational thoughts that were held down by pain in the reactive mind and, in short, regains himself. Without a reactive mind, an individual is much, much more himself."²⁰



Figure 8.1. Burroughs' "The Engram Theory" in *Mayfair* (November 1967).

The Reactive Mind

In *Self-Help* (1859), Victorian didact and author Samuel Smiles proposed that progress comes from new attitudes, rather than from new laws.²¹ These new attitudes, argued Smiles, are produced from the development and practice of new habits: "Change people, change the world." Smiles was also one of the principal architects of the well-known moral philosophy: "a place for everything and everything in its place." While some dismiss *Self-Help* as a book conscripted by a middle-class Victorian moralist and, worse, one espousing strict capitalist individualism, *Self-Help* grew out of a popular lecture, delivered at a mutual improvement society, with the premise that with the cultivation of one's self-knowledge through 'self-help,' or through the deliberate practice of "self-culture" (motivating purpose), there is possibility for a self-organizing social order that does not rely on hierarchical class order. A well-organized, self-determined working-class would not require "over-guidance and over-government," or anything exterior to their own agency, to

survive. Smiles portends the cultivation of the habit of active attention upon which “all the higher working qualities of the mind mainly depend.” The cultivation of this habit of attention—involving “close observation of little things”—is given to the self as the project of constant modification and improvement, a process requiring “hardy training,” “industry,” “force of purpose,” and “*unbounded* perseverance.”²² He writes in *Self-Help*: “It is the repetition of little acts which constitute not only the sum of human character, but which determine the character of nations. And where men or nations have broken down, it will almost invariably be found that neglect of little things was the rock on which they split.”²³

Smiles might initially appear an odd choice to synthesize with William S. Burroughs’ theory of control, which explores language as a virus that uncontrollably parasitizes, governs, and produces mutations that pose lethal social controls at risk of exterminating human hosts. (This is how Burroughs describes the “specially malignant and lethal form of . . . the white word virus.”²⁴) Burroughs, throughout his body of work, but in particular with the cut-ups, is expressive not only of the present era’s paranoid techniques for neurocognitive and psychosocial governance of publics in cybernetic capitalism, but also, the near future’s bioweaponization of human emotions and neuroplastic potential that he witnesses the technological engineering of everyday life in the immediate postwar period pointing towards, along with the spectacular cultivation of human inattention to it: mind control machines doling out “stabbing probes of telepathic interrogation”²⁵; “the secret police always everywhere in different form”²⁶; “[b]rain-eating birds patrol(ing) the low frequency brain waves”; “IBM machine controls thought feeling and *apparent* sensory impressions. . . . Whatever you feed into the machine on subliminal level the machine will process.”²⁷ In the 1950s, Burroughs anticipates these new mind-altering forms of social control will mutate to *on-demand* services, due to the efficiency networked machines bring to the predation, access to, and work upon the “soft machines” of individual brains and especially on the traumatized and highly reactive parts, the useful aberrations and disturbed subjectivities—the “reactive minds” and not the “analytical minds”—of control subjects.

Smiles, with his early recognition of psychological and production (or constitutive) aspects of social control (by belief systems) over brute power resonates with Burroughs’ rhetorical and aesthetic project, and its countermovement against control society’s affect-engineering, “prisons

of belief,” and thought policing of personal and public traumas via the automatic and involuntary behaviors of “the Reactive Mind . . . an ancient instrument of control designed to stultify and limit the potential for action in a constructive or destructive direction.”²⁸ The Reactive Mind (RM) is a foundational concept in Dianetics (a pseudoscience that predated Scientology) and in Scientology, the religion formulated by L. Ron Hubbard. In *Dianetics: The Modern Science of Mental Health*, the Reactive Mind refers to the “unconscious”/nonanalytical parts of the mind: the uncontrollable, negative emotions, feelings, and attitudes including sadness, anxiety, anger, grief, guilt, shame, lack of self-confidence, etc. It holds all the traumatic memories that impede personal growth, and by extension, social progress and freedom from social control. Specifically, it is composed of past events of pain (engrams) traumatically—and even destructively—imprinting upon and shaping the unconscious, and all aspects of experience.²⁹

In Dianetics and Scientology, it is proposed that the Reactive Mind can be therapeutically depatterned with a patented treatment called “Dianetics auditing.” An auditor uses an e-meter (galvanic skin response detector or biofeedback device) to locate these past events of pain and erase them. Like the classical conditioning of Ivan Pavlov’s dog or John Broadus Watson’s infant, the student undergoing the auditing process in Scientology is subjected to extreme and orthodox behaviorist reprogramming via repetitive, intensive “training patterns.” A panoply of training routines places *increasing levels of thought conditioning into the student* as well as escalating levels of force and control³⁰—and it is by relinquishing all forms of resistance to these, that the student will be able to access their nonconscious Reactive Mind and “erase [their] involuntary subservience to authority.”³¹

The Dianetics method appealed to a postwar audience of readers suffering from undiagnosed traumas, behavioral problems, painful neuroses, psychosomatic ailments, alienating inhibitions, addictions, etc. as a practical method for self-knowledge, self-control, and self-determination. It was a tool by which, along with auditing and e-meter readings to clear engrams, one hoped to ultimately heal themselves from crippling emotional wounds. It promised those who trained with force of purpose a superhuman degree of self-awareness or consciousness; an “awareness of awareness” that can be discovered *only* through Dianetics’ abreaction therapeutic techniques. The axiom for Dianetics is: “There is only one way out, and that is through.”

Dianetics is centered around Hubbard's concept of the Reactive Mind and its composition of engrams, which are:

A mental image picture of an experience containing pain, unconsciousness, and a real or fancied threat to survival. It is a recording in the reactive mind of something which actually happened to the individual in the past. . . . It must, by definition, have impact or injury as part of its content. These engrams are a complete recording, down to the last accurate detail, of every perception present in a moment of partial or full 'unconsciousness.'³²

Engrams are sociomorphic and spread like viruses. For Hubbard, even the anticipation of engram contagion is disruptive; the “ever-present threat of engram contagion lies behind most human mistreatment and even war.”³³ For Hubbard (and by extension, Burroughs), words can act as stimulants that trigger engrams, causing the reactive mind to make predictable choices, so that the word becomes a form of predictive control. Burroughs repeatedly warned that total freedom (from conditioning) is impossible because we are collectively, even ecologically, stuck in a “cycle of conditioned action.” Engrams are a form of involuntary internal speech that requires technical know-how to unlearn.

Burroughs warned about the misuse of a technology for social control that relied on “mind control or even the complete destruction of a person's mind.” In his review of the literature of Scientology (conducted in the 1960s as part of his training to become designated a Clear), Burroughs wrote: “It is no exaggeration to say that anyone who wants to understand the destructive techniques used by the CIA and other agencies official and private must read Hubbard's writings and must read them carefully.”³⁴

The Reactive Mind and its engrams are central concepts of Scientology, which although it is now mostly marginalized as a “mind-control cult” that is “unable to change with the times”³⁵—and clings to relevance by deifying its most high-profile celebrity member, Tom Cruise—was initially presented as an antipsychiatry movement, an alternative to psychiatry, not “self-help” but practical know-how of a feedback technology for freedom and self-realization *through* mind control that appealed to self-experimenters like Burroughs and Aldous Huxley in the early days of Dianetics. Dianetics is the method that piloted Scientology, when it still claimed to be a “science.” Burroughs followed Scientology devoutly for a decade then very publicly disavowed it as a

“repressive discipline” (1959–1970).³⁶ Ted Morgan, a biographer of Burroughs, notes: “Burroughs left Scientology, impressed by the auditing techniques but disgusted by the authoritarian organization and the stupidly fascistic utterances of L. Ron Hubbard. The aim of Scientology, complete freedom from past conditioning, was perverted to become a new form of conditioning. He had hoped to find a method of personal emancipation and had found instead another control system. Scientology roped you in and bound you. It was like a state, with its own courts and its own police, its own rewards and penalties, and its own ludicrous jargon.”³⁷ As one of Burroughs’ contemporaries, another early adopter and “defector” of Scientology describes it, “I think Scientology could herald a new form of mental and moral tyranny to a world already obsessed with a large number of enslavements.”³⁸

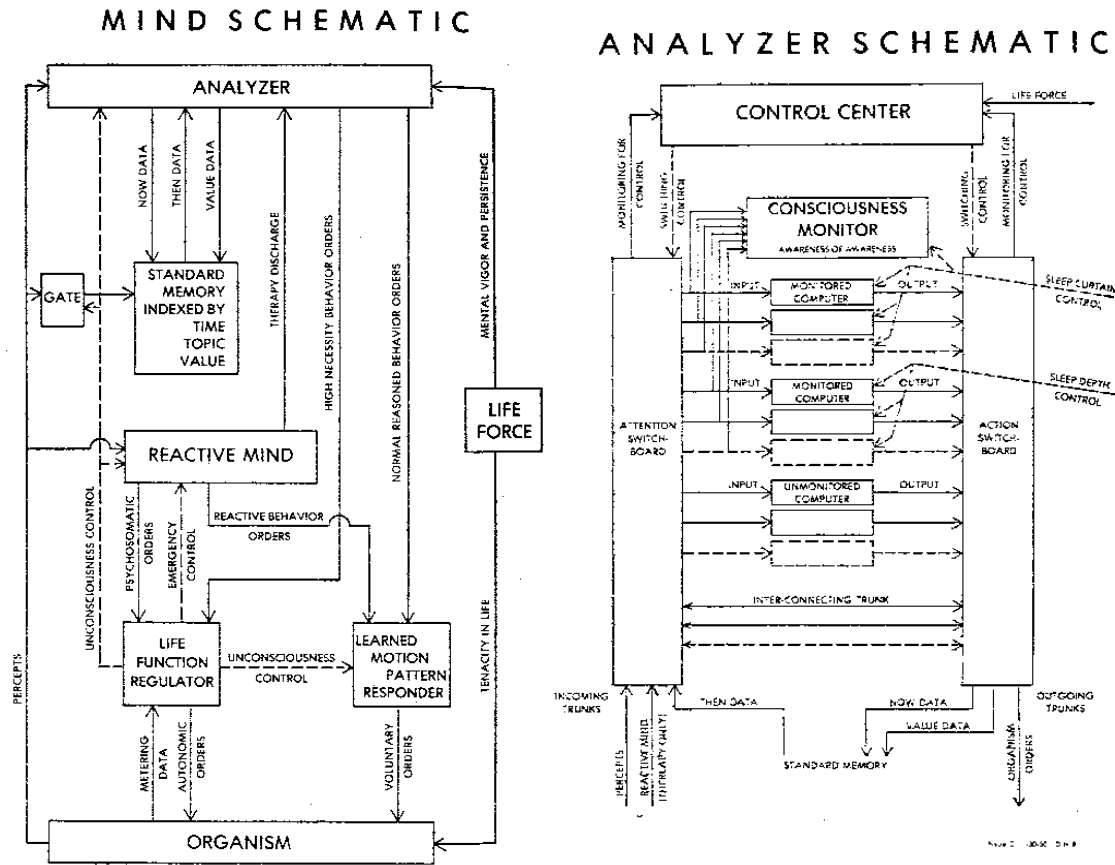


Figure 8.2. Diagrams of Reactive Mind and Analytic Mind from the Appendix in original and early (pre-1980s) editions of L. Ron Hubbard’s *Dianetics*.

In his first publication introducing the method of Dianetics, “Terra Incognita: The Mind” (1950), Hubbard explains his new science in terms familiar to General Semantics and cybernetics: “Those familiar with General Semantics will understand how the reactive mind computes when it is stated that it ‘computes’ in identities.” Hubbard describes auditing (or directed recall) as a technique for reprogramming the brain and furthermore, annulling the traumatic-affective material that makes up the Reactive Mind by thought training to Clear status (a person who no longer has their Reactive Mind). Burroughs referred to Dianetics as a form of “encephalographic research” on par with contemporary experiments by neurophysiologist Grey Walter (direct brain intervention), mind-altering/expanded consciousness generating experiments by Timothy Leary with hallucinogens, and the covert neurochemical experiments conducted during the Cold War, such as the CIA’s top-secret mind and drug control program, MK ULTRA.

Communication and control

According to Burroughs, the Reactive Mind is located in the hypothalamus, the part of the brain that regulates key functions (e.g., temperature, weight, emotion); maintains daily physiological cycles (i.e., homeostasis); and contains the gland that controls hormonal function. It regulates both sympathetic and parasympathetic systems. In cybernetic terms, it is the seat of self-governance. This is an area of the brain neurophysiologists have made great effort to understand, and in the process, to address and heal the “invisible wounds” (“psychoneurotic wounds,” later reframed as “post-traumatic stress disorder”) that materialize as “problems” that require “readjusting” to the everyday life of normative culture by various, capital-intensive regulatory systems—the prisons, the police, the university, the media, the factory/office/work, the entertainment complex, consumer culture, etc.

Burroughs articulates a similar analysis of domination around the psychosocial structures of authority as the Frankfurt School’s “The Authoritarian Personality.” Whereas the Frankfurt School concerned itself with personality archetypes of factory production in the culture industry, Burroughs is concerned about how new forms of media were making everyone “a storehouse of alternate identities, residing in ever-relocating interstices of attention.”³⁹ “Gentle reader,” he croons in an early draft of *Naked Lunch*, “we see God through our assholes in the flashbulb of

orgasm. Through these orifices transmute your body, the way out is the way in.”⁴⁰ Now it’s subaltern, a born-digital generation with some control over the technological modulation and mass production of our identities. We now have the tools to simulate self-creation, to become brands and influencers.

However, at the same time, we cannot live freely, we cannot escape the many versions of us floating freely on the web, as units of information attached to a storehouse of versions of our past selves (see, for example Kate Eichhorn, *The End of Forgetting*.⁴¹ We are never free to forget or be forgotten. Moreover, as Burroughs warned, engrams—word viruses—are productive of undefinable threats, new semiotic monsters—uncontrollable forms of control operating from both within “inner space” and with the structures of new media (requiring new forms of “interspecies communication”). These mutate human attention, perceptions, values, and social ecologies of masses while at the same time, the *disturbed metabolism* of a deterministic mass media and consumer culture amplifies the needs, fears, pains, and traumas (engrams) of its constituents, accelerating historical epochs.⁴² As Burroughs noted: “Beyond a certain frequency need knows absolutely no limits or control.”⁴³

Burroughs’ expanded control theory mapped innovation, re-creation, self-creation, and self-annihilation to the neurogenetic conditioning of an integrated world-brain and immune system. This eugenic mutant is the opposite of expanded consciousness—the inner-world of outer space that Burroughs sought by any means necessary—drugs, Scientology, flicker technologies, Reichian orgone accumulators, etc. Through literature, multimedia art, as well as countless self-experiments with psychoactive drugs, Burroughs investigated the “disturbed metabolisms” of control subjects (with unique addictions, habits, dependencies, and anxieties), to discover how so-called metabolic disturbances are engineered to chemically synthesize control systems with individual nervous systems and what are some of the potential ways out of “*your involuntary subservience to authority*.”⁴⁴ Writing in the context of government-led and public-funded drug experiments on marginalized communities—drug addicts, prisoners, sex workers, psychiatric patients, soldiers with post-traumatic stress symptoms, mothers exhibiting symptoms consistent with postpartum depression, artists—and at the forefront of Big Tech, Big Media, and

computational culture, which accelerated automation to exceed human cognitive and metabolic capabilities, Burroughs had cause for concern.⁴⁵

Burroughs' essay "The Limits of Control" (1978) opens with a short list of encroaching forms of behavioral and mind control techniques, culminating in the pronouncement: "the technocratic control apparatus of the United States has at its fingertips new techniques which if fully exploited could make Orwell's *1984* seem like a benevolent utopia."⁴⁶ He called this "arbitrary and intricate bureaucracy"⁴⁷ a "junk relationship" that *invents needs to justify its existence*, spreads like a contagion, and becomes the regulatory terms of a malignant power. These "word viruses" are the profligate, free-floating, formless, parasitic organisms that use humans' greatest vulnerabilities to determine and engineer publics, value systems, affects, affections, and sensitivities as well as the addictions, habits, and dependencies that insulate us from metabolic social changes.⁴⁸ Social control is enforced with dogmatic and arbitrary commands, or *order words*, that target certain areas of the (reactive) brain and condition it to create particular effects.

In the early 1960s, he explained this in context of a conversation with Beat poets Allen Ginsberg and Gregory Corso:

I feel that the principal instrument of monopoly and control that prevents expansion of consciousness is the word lines controlling thought, feeling and apparent sensory impressions of the human host.⁴⁹

Transmuted and shaped in relations with others, the whole social system is continuous informational control, modulatory intra-action, the distributed regulatory power of a "dominating and observing gaze" that simultaneously produces and enslaves, differentiates and normalizes individuals.⁵⁰ Jeremy Bentham is credited with being the first to discuss this, by Foucault, who his presentation at the "Schizo-Culture" colloquium referred to the "sort of facile, barely disguised Hegelianism behind it: capitalism, the negative movement, bound for a proximate *Aufhebung*."⁵¹



Figure 8.3. This is your brain as featured by an iconic 1980s-era ad promoting “drug-free America.”

Aufhebung has contradictory meanings: to abolish and to preserve. In the philosophical lexicon it is considered one of the “untranslatables,” but it appears to bear close resemblance to plasticity.⁵² Catherine Malabou discusses the Hegelian *Aufhebung* as the impossibility of absolute negation: it is rather a process of maintaining “the right proportion of suppression and preservation” or “between maintenance and annihilation . . . [it is] constituted as both a conservation and a loss.”⁵³ It is a mechanism for fine-tuning the balance between these countervailing constitutive forces.

In an interview for the “Schizo-Culture” issue of *Semiotext(e)*, Foucault discusses Bentham’s formulation of power as “ingenious”:

No need for arms, physical violence, or material restraints. Rather there is an observing gaze that watches over people and that that each individual, due to the fact that he feels it weighing on him, finally internalizes to the point where he observes himself: everyone in this way exercises surveillance over and against himself. This is an ingenious formula: a continuous form of power at practically no cost!

A new technology of power had to be invented, Foucault argues, that would “insure the free-flow of the effects of power within the entire social body and on the most minute of levels” and it is with this that “power becomes a machinery controlled by no one.”⁵⁴

Morphing intelligence

Plasticity/neuroplasticity is generally discussed in terms of growth and enhancements, i.e., a positivist neuroaesthetics “aids the governmentalization and policing of the sensible, especially in our world of pattern recognition, algorithmic surveillance, and Big Data.”⁵⁵ Nevertheless, as Malabou explains, “The fact that all creation can only occur at the price of a destructive counterpart is a fundamental law of life. It does not contradict life; it makes life possible.”⁵⁶ But no one really wants to discuss destructive plasticity, Malabou contends, so it remains underexplored, undertheorized, uncharted.

Deleuze and others recognize Burroughs’ understanding of how control in postwar, cybernetic capitalism was becoming less focused on organizing bodies and putting them to work and increasingly, was harnessing affective, emotive, and linguistic forces and putting them to work, not in the production of things or value but in mobilizing neuroplastic techniques in the direction of “alien” forms of control, of technics or computation, and as destructive plasticity which disassembles and dis-assembles life in twentieth-century cybernetic capitalism. Control is the name proposed by Burroughs to characterize *this new monster*,⁵⁷ the technological mutations that allow social control to “become one with the host” by parasitizing human weaknesses, nonconsciousness, ‘deep-seated’ emotional beliefs and apathies more intensively, from ever-greater distances, via the monster of “connected intelligence.”⁵⁸ Connected intelligence, as we understand it now, refers to the degree to which electronic media technologies have extended individual nervous systems but also subjectivities into the lived realities of algorithms. The goal of connected intelligence, unfortunately, it seems, was not to connect and augment a shared intelligence, but to control communal streams of information by infiltration and indoctrination and “managing” publics by finding ever new ways to use connection and disconnection to assimilate and nullify subjectivity.

This chapter looks at various ways Burroughs documented how, in the mid-twentieth century, a greater understanding of neurophysiology and cybernetic systems was empowering the monstrous “technocratic control apparatus of the United States”⁵⁹ to automate social control and annihilation of publics from a distance. As *Obsolete Capitalism* points out: “Burroughs believes that cybernetics . . . intends to shape society into the form of a codified series of individuals bound together by computable actions and interdependencies, in order to create a regularized entity that can be regarded as a whole. Control and manipulation will be the new techniques of this algorithmic and serial logic of Western society.”⁶⁰ Overall, this statement by *Obsolete Capitalism* raises questions about the implications of cybernetics on human agency, autonomy, and social dynamics. It invites critical examination of the ethical dimensions of control, manipulation, and algorithmic logic in relation to concepts like power, subjectivity, and “social order.”

Building on *Obsolete Capitalism*’s theses on anxiety as the current form of control, contemporary societies of control are powered and unified by machines for anxiety (precarity), machines for making-vulnerable (austerity), and machines for alienation (psychopathology). Machines for anxiety induce and perpetuate a state of constant insecurity and uncertainty among individuals. This anxiety becomes a tool of social control, as it keeps individuals on edge, susceptible to manipulation, and more willing to conform to societal expectations. Similarly, the machines for making-vulnerable, such as austerity measures, contribute to the modulation of publics by creating precarious conditions that erode social “safety nets” (a US-specific term for public policies) and increase individuals’ vulnerability. This vulnerability can be leveraged to exert control and influence over public behavior, as individuals may feel compelled to conform in order to secure their basic needs and survival. Furthermore, the machines for alienation, which contribute to psychopathology, can shape publics by fostering a sense of disconnection, detachment, and isolation among individuals. This alienation—as we saw clearly with the shutdowns during the height of the social regulation period of COVID-19—can make people more susceptible to control, as they may seek solace or belonging in ideologies, consumerism, or other forms of escapism that offer temporary relief from their underlying psychological or existential distress. The machines for anxiety, making-vulnerable, and alienation intersect with the concept of “control by incontinence” exhibited by contemporary plastic publics, reflecting the ways contemporary

societies of control utilize these mechanisms to shape and explode forms of public behavior. Plasticity becomes a crucial lens for understanding how these machines operate within the dynamic and evolving networked systems that metabolize, give form to, and explode contemporary publics.

Capitalism's Metabolic Power

For Burroughs, control societies are the everyday life of behaviorally conditioned, mind-controlled subjects, and moreover, a cultural project and paregoric that avails itself of the early Cold War era's geopolitics and mass media apparatus. Its phenomenology is televisual; it is "more or less a constant scanning pattern,"⁶¹ a noisy field of "convulsive negation"⁶² that erases and mutes the affectivity of its subjects. Burroughs observes how cybernetic techniques of social control, increasingly established through metabolic dysregulation, are used to disturb flows of all kinds, because: "Beyond a certain frequency need knows absolutely no limit or control."⁶³ In *Naked Lunch's* preface, Burroughs describes the effects of junk on relationality in media-aesthetic terms: With junk he is tuned out. He doesn't care when friends enter or leave his "field of vision." He passively stares as they progressively become "a grey screen always blanker and fainter." He consumes hallucinogenic images of his own habituated drug use like a movie, cuts them into words on a page, then breaks the fourth wall and asks his reader: "Wouldn't you?"⁶⁴

In conversation with Antonio Negri about what are the possibilities for communism amid cybernetic capitalism's new technologies, Deleuze warns: "We're definitely moving toward 'control societies' that are no longer exactly disciplinary. . . . We're moving toward control societies that no longer operate by confining people but through continuous control and instant communication. Burroughs was one of the first to address this."⁶⁵ He describes how "control from a distance" perfected with military precision during the Second World War becomes, during the Cold War and thereafter, an opaque technique and capacity that describes the world's endocolonization by "money machines" [Burroughs' term for capital] and, how this also applies to the *generalization* of inner space. In "The Concepts of Life and Living in the Societies of Control" Maurizio Lazzarato cites Gabriel Tarde's observation of the following phenomena in late-nineteenth-century media audiences and which came to characterize control societies: the 'social group of the future' is neither the crowd, the class, nor the population, but the 'public' (or

rather publics).⁶⁶ Control systems have enabled what are essentially *disconnectors* to penetrate, distribute within, and mutate neural networks and meaning-making systems. Meaning obfuscated, anonymized, and nullified is where power has autonomy.

In his Q & A at “Schizo-Culture,” the event that acquainted Burroughs with the French May ’68 theoretical milieu—Félix Guattari directly acknowledged the American Beat artists’ pioneering work—which in this case included and featured Burroughs—on “the acuteness of the problems concerning the semiotics of the body, of perception.”⁶⁷ In a subsequent panel, he elaborates subjectivization as a technology of power involving “semiotic subjugation on all levels: body—socius—gestures—speech—attitudes—glances—dance—tears—organs—a license to drive—a license to fuck—watch what you’re saying—don’t talk to me in that tone of voice. The unconscious is structured like a language to the extent, and only to the extent, that it falls into the clutches of a formation of power.”⁶⁸ To further underscore the dangers of semiotic infiltration and infra-subjugation, Guattari warns:

Capitalist power injects a *microfascism* into all the attitudes of individuals, into their relation to perception, to the body, to children, to sexual partners, etc. If a struggle can be led against the capitalist system, it can only be done, in my opinion, through combining a struggle—with visible external objectives—against the power of the bourgeoisie, against its institutions and systems of exploitation, with a thorough understanding on which capitalism is based. . . . Everything is done, everything is organized in what I will call the *individuation of enunciation*, so that one is prevented from taking up such work, so that an individual is always coiled up in himself, his family, his sexuality, so that such work of liberation is made impossible.⁶⁹

Burroughs argues that the freedom to create and connect necessitates “*breaking the feedback*” between word-image mass control systems and control subjects.⁷⁰ Before cognitive capitalism and semiocapitalism defined the hyperconnected conditions of contemporary capitalism—not only the labor performed on us and by us with the need to work to live in capitalism but especially our capacities for self-governing and making choices—Burroughs was preoccupied with the pathological “breaking down” of human subjects into overloaded, overcoded thinking machines. This theme is explored more recently in works by Bernard Stiegler as a “*katastrophē* of the sensible,”⁷¹ by Tony Sampson as an “*open-ended neuropower* that thrives on its own

contradictions,”⁷² by Matteo Pasquinelli as “augmented intelligence and its traumas,” by Obsolete Capitalism as “the algebra of evil,” and by Institute for Precarious Consciousness (Plan C) as the equation of anxiety with precarity, or what we observe in the present dynamics of control vis-à-vis accelerationist cultural dynamics.

Sampson writes, there’s “a general and political relation established between the sensory environments of capitalism and certain brain-somatic states. I think these relations are crucial to understanding the paradoxical and dystopic nature of neurocapitalism.”⁷³ Consider, for example, what we do not know about the extent and proliferations of intelligent technologies and neuro-invasive flows by which every action we perform is anticipated, monitored, intercepted, collected, cataloged, tracked, and reflowed by networks of machines. Not knowing where to direct attention challenges the brain’s ability to self-regulate attention and the emotions. In such perpetually anxious hyperarousal—and as connective technologies continue to evolve—people learn to automate behaviors, moods, and self-knowledge in synthetic interpersonal ways. Burroughs said as early as *Naked Lunch* (1959) that these techniques, processes, and relations short-circuit and exceed consciousness. Well-behaved capitalist subjects are conditioned by repressing their entire perceptive semiotics, all their problems, becoming distrustful of unlearning, failure, entire learning systems. “Capitalist power injects a *microfascism* into all the attitudes of individuals, into their relation to perception . . . etc.”⁷⁴

Systematizing inner space

An interpsychic conception of self and a cybernetic conception of connection are partly influenced by the work of anthropologist Gregory Bateson, another student of Korzybski’s General Semantics. In Bateson’s view, the self is a “network of pathways . . . not bounded with consciousness but extends to include the pathways of all unconscious mentation—both autonomic and repressed, neural and hormonal. The network is not bounded by the skin but includes all external pathways along which information can travel. . . . It includes the pathways of sound and light along which travel transforms differences originally immanent in things and other people—and especially in our own actions.”⁷⁵

“We live in a world that’s only made of relationships,” and moreover, all relationships are power relationships.⁷⁶ In his work to understand and treat addiction (e.g., “The Cybernetics of Self”), Bateson maintains that addiction is produced by disturbances in communication within self- and world-making systems that include all relations to power.⁷⁷ The world’s problems result from differences between how people work and the way people (are trained to) think. Bateson also advocated for changing ourselves to change the world, but rather than Smiles’ “attitudes” he addressed the problem of cognitive distortions, and how to change our epistemologies, or ways of thinking about what we think about—including our own subjugation to forces that appear to be beyond control.

Burroughs’ conception of inner space also echoes that of nineteenth-century French physiologist Claude Bernard’s evolving concept of the *milieu intérieur* [inner world]. When Bernard introduced the idea of the “inner world” he partially theorized homeostasis: “The constancy of the internal environment is the condition for free and independent life. . . . All the vital mechanisms, however varied they might be, always have one purpose, that of maintaining the integrity of conditions of life within the internal environment.”⁷⁸ Later in his career, Bernard’s concern becomes oriented to the principle of dialogical interaction, or what he called *compensatory reactions*: “the body maintains the constant ‘other sameness’ of the internal environment by myriad, continual, compensatory reactions. These compensatory reactions would tend to restore a state of equilibrium in response to any outside changes, enabling independence from the external environment. In response to perturbations of the inner world, body systems would react to counter those perturbations.”⁷⁹

When at the beginning of the twentieth century American physiologist Walter Cannon expanded on Bernard’s theory of the *milieu intérieur*, inventing the word “homeostasis” to refer to the stability of the inner world, the idea of regulation was aggressively mechanized. Cannon trains his focus on the experimental study of “*internal and external disturbances threatening homeostasis*,” how they “*arouse internal nervous and hormone systems, induce emotional and motivational states, and generate externally observable behaviors*, all of which have the goal of re-establishing homeostasis.”⁸⁰ The key problem Cannon’s theory encountered over time is that it did not take into account the possibility that the goal levels of the inner-world’s myriad values

might also change over time. Accordingly, a newer concept was developed, *allostasis* [Greek for other-sameness], based on the principle that organisms maintain stability through change over time.⁸¹

Word viruses

The ultimate freedom for Burroughs is freedom from conditioning from engrams that could be easily manipulated by “push button control.”⁸² Even before his work focused on his terminal rejection of Scientology as a mind control system, Burroughs continually called for, designed, and devised methods to decolonize the body’s meaning-making systems, which he describes in terms of virology:

Having effected alterations in the host’s structure that resulted in a new species specially designed to accommodate the [word] virus the virus can now replicate without disturbing the metabolism and without being recognized as a virus. A symbiotic relationship has now been established and the virus is now built into the host which sees the virus as a useful part of itself. This successful virus can now sneer at gangster viruses like small pox and turn them in to The Pasteur Institute.⁸³

Burroughs’ word virus is any discourse or image or symbol that aggressively invades, occupies, and infects the host, forcing it to subvocalize and thereby endlessly reproducing itself at a cellular level. It is this internal monologue, all but impossible to shut off and expressly nonhuman, which produces an all-too-human sense of identity and self-continuity. For Burroughs, the all-consuming need of addiction, the impersonal single obsessive action he calls “the algebra of need” or the “junk relationship,” is expressed as an endocolonization of inner space. Social connections are replaced with a system of obsessive dependencies “which run from within to without, from without to within, from above to below, from below to above. All is dependent, all stands in chains. Capitalism is a condition of the soul and the world.”⁸⁴

Beginning in the 1950s, Burroughs pushed the idea that language is responsible for society’s long cultivation of “induced obedience to every kind of addictive authority from gods to drugs,”⁸⁵ and is the ultimate social control. In *Obsolete Capitalism’s* analysis of Burroughsian control, language is a process by which “codified series of individuals [are] bound together by

computable interactions and interdependencies, in order to create a regularized entity that can be regarded as a whole . . . possessing individualities.”⁸⁶ This is how Burroughs anticipates the constitutive powers of communication and control moving from ‘in the beginning was the Word’ [see John 1:1 and Beiles, Burroughs, Corso, Gysin in *Minutes to Go* (1968) and later in Burroughs, *The Book of Breething* (1975), to ‘in the beginning was the command line’ (Neal Stephenson)]. Burroughs recognizes that these flows and feedback loops of techno-neuro-social-hormonal control have the authorial power to “determine all flesh,” to create us. Both Burroughs and Deleuze envision information technologies as open systems of control, what happens when “the factory has given way to the corporation.”⁸⁷ No longer centralized among authorities, power functions according to a multitude of intelligent agents and “mind parasites” feeding on global networks of informational, affectual, and bodily flows.⁸⁸

What was emerging from the cybernation of mass communication technologies and mass culture in the mid-twentieth century was a connective control operating at a previously unattainably deep level of neuro-affective circuitry. In Burroughs’ summation, capitalism was mainlining human nervous systems with the objective of building ever-larger cybernetic infrastructures to run its programs for social reality. These programs are able to automatically and efficiently produce subjectivities suitable for a new world order. Language, and by extension communication, is the “ultimate ‘diabolical machine,’ since no one controls it and everyone is caught in it: everyone is at once ‘those who exercise the power as well as those who are subjected to it.’”⁸⁹ Everyone is caught in it and it is everywhere, because transformation—at any level—is the product of a time-binding, connective, collaborative consciousness. The culmination of humanity’s neurotechnological potential is recognizing that “the monsters, of course, are us in the future.”⁹⁰

The problem of control appears throughout Burroughs’ endeavors: in his literary work; in his letters, essays, and interviews; in his multimedia collaborations with Brion Gysin and other artists; in his impromptu public political actions with recording devices; in his letters to pharmaceutical and medical professionals documenting his own ‘cutting-edge’ neuroscientific research based on self-experiments with the brain’s programmability via drugs; his interest in the potential for psychic/mental liberation with staples of Scientology and flicker technologies; in

mapping his lived experience of the circuit of addiction and withdrawal onto the cybernation of global capitalism from the early 1950s, when he first published, until his death. Indeed, long before cognitive capitalism and semiocapitalism were codified under contemporary capitalism, Burroughs recognized that word viruses—a code word for that which works parasitically upon our inner life, inner monologue, consciousness, the stories we tell ourselves, etc.—were shaping mid-twentieth-century America’s indiscriminate consumer society at a deep neural level. For Burroughs, mutation was “the only way out of the present mess.”⁹¹ Early cyberneticists, particularly in its confluence and collaboration with neurophysiology and psychology, was obsessed not only with the mechanization of human reason but in the abnormal states of machines, in those pathological breakdowns that force structures to form new equilibria and new compositions.

Moving through Martin Heidegger’s ‘man lives in language and is shaped by language’ (1950) to the viral propagation of Marshall McLuhan’s *Typographic Man* (1962), Burroughs admonishes readers to *rub out the word forever*. By compelling the reader to make associations rather than follow a narrative, Burroughs, aka “The Invisible Hombre,” disappears himself into a collective project of making sense. This imperative transverses Roland Barthes’ “Death of the Author” (1967), in which he memorably writes, “it is language which speaks, not the author,”⁹² and Foucault’s lecture “What is an Author?” (1969), in which he proposes:

Perhaps the time has come to study not only the expressive value and formal transformations of discourse, but its mode of existence: the modifications and variations, within any culture, of modes of circulation, valorization, attribution, and appropriation. Partially at the expense of themes and concepts that an author places in his work, the ‘author-function’ could also reveal the manner in which discourse is articulated on the basis of social relationships.⁹³

It was in the same year as Barthes’ declaration that the notion of singular authorship of literature was “dead” and giving way to the “birth of the reader,”⁹⁴ AI pioneer Marvin Minsky famously made the prediction that all of artificial intelligence’s important goals could be reached within a decade. At the time, these goals were focused on the ability of computers to “mimic” higher-level cognitive processes of human intelligence. Minsky proposed that the mind is composed of a

multitude of processes called “agents,” and that “each mental agent by itself can only do some simple thing that needs no mind or thought at all.”⁹⁵

When Burroughs initially declared word a “virus,” he was affirming that language’s power relies not only on the speed of its transmission, but also on the ability to invade our cognitive immune system by employing concealed power relations. Burroughs was seeking to create resistances or counterpower systems that engage self-learning (learning on one’s own, outside of the dominant pedagogy of “automated learning”)⁹⁶; self-management of the disconnects and affects of atmospheric overstimulation (by paying attention and making adjustments to their own connections); and, explosive breakdowns that could push machine structure to form new equilibria and new compositions. Burroughs proposed neuroscientific and psychopharmacological self-experiments to jam *control-addicted* semicapitalism, disrupting the patterns of our behavior and relations that by neuro-hormonal assimilation or elimination, constitute and condition its destructive substance.

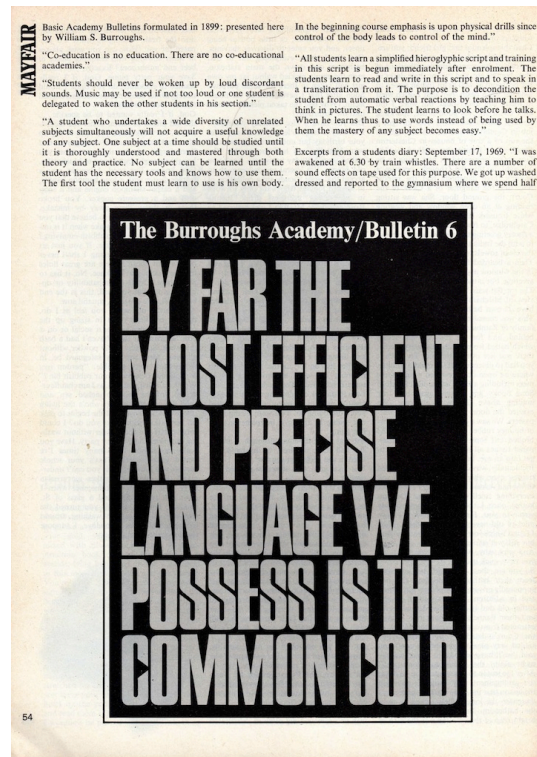


Figure 8.4. The Burroughs Academy, Bulletin 6 in *Mayfair*.

Control is junk

*The finger must remain lurking in the back of one's mind, or else one won't know where to look!*⁹⁷ —Roy Pennington

*I call the discourse of power any discourse which engenders blame, hence guilt, in its recipients.*⁹⁸ —Roland Barthes

In *Ontology of an Accident*, Catherine Malabou discusses the potentials created by “the destructive event” of neurological trauma: “A new being comes into the world . . . out of a deep cut that opens in a biography.”⁹⁹ This is how Burroughs, drawing on his own experience as addict, famously recognized addiction as a form of social control. He believed there is no better source for understanding the psychopathologies of addiction, and the relationship between impersonal habit and interpersonal social control, than the lived experiences of the drug addict: “*You see control can never be a means to any practical end. . . . It can never be a means to anything but more control. . . . Like junk.*”¹⁰⁰

Burroughs saw control as based on failures of metabolic regulation occurring simultaneously at many levels, however, he does not always cast these “failures” in negative terms: they can be lines of flight; ways out of moral, social, political blocks to difference, autonomy, choice. These are not merely “personal freedoms,” because “inner worlds” refers the extent to which we have internalized and adopted, as our own, the values and belief systems of authority:

Throughout human history, as our species has faced the frightening terrorizing fact that we do not know who we are, or where we are going in this ocean of chaos. It has been the authorities, the political, the religious, educational authorities who attempted to comfort us, by giving us order, rules, regulations. Informing, forming in our minds their view of reality. To think for yourself you must question authority and learn how to put yourself in a state of vulnerable, open-mindedness; chaotic, confused, vulnerability to inform yourself.¹⁰¹

Burroughs also believed the American junkie is a creation of American history. Indeed, pharmakon-like, addiction is deeply entwined with American history. The American Civil War is generally seen as the event that catalyzed America's opiate epidemic. Physicians prescribed

opium, first in gum form then as hypodermic morphine, for soldiers on the battlefield to self-manage ailments ranging from pain from gun wounds to diarrhea.¹⁰² In the nineteenth century, opium, in all of its forms, was available at druggists, grocers, general stores, physicians' offices and later, via mail order catalogues.¹⁰³ As society shifted into the moral policing of the Victorian era, addiction acquired its status as a medical condition and was classified as a "disease," its users were designated as "sick," control and regulation of drug use were formalized, and drug use was marginalized. Addiction was invented by this shift from uncontrolled drug use to pathologizing certain users as *drug abusers* (by interdisciplinary teams of psychologists and doctors), while at the same time valorizing modern capitalism's pharmacological regulation of populations with various forms of chemical control. As Sadie Plant observes in *Writing on Drugs*: "When drugs change their users, they change everything."¹⁰⁴

Soft Machines of Social Control

Beyond virality (of communication) and addiction, Burroughs' work entwines a third marker of contemporary controls societies: the bioweaponization of behavioral psychology and neuroscientific praxis. We can detect in Dr. Benway, a recurring character in Burroughs' novels, an enhanced behaviorism that extends and intensifies control's techniques for the mass conditioning of human subjectivity at the level of neurogenesis. Dr. Benway is introduced in *Naked Lunch* as a surgeon and expert in brainwashing and mind control mid-twentieth century behaviorists, neurophysiologists as well as advertising and media executives. He recalls L. Ron Hubbard, Donald Ewan Cameron, B.F. Skinner, et al. In short, he is the aggregate of all of these behaviorists who work on affective technologies of the nervous system to not only identify and shape patterns of groups, but also to "alter the very terms by which we define ourselves as human" for the principal goal of social control.¹⁰⁵

Dr. Benway connects these mid-twentieth century experimenters in control back to nineteenth-century hygienists, who according to historian Philipp Sarasin came to understand the body quite literally as a medium and their view of the body as a "media-machine." Sarasin writes, "the discourse of hygiene developed as a means of thinking of the body as the 'property' of the autonomous (usually male) bourgeois subject," and in this narrative, the body was therefore an

“alien object” that was constantly threatening to “escape his control.”¹⁰⁶ In a move away from the Cartesian notion of the body as clockwork automata with a central organization system, the media-machine owes its existence to the networking of communication technologies in early industrial culture. The hygienists above all were interested in promoting certain Enlightenment disciplinary models of feedback systems to be used for the shaping of new urban publics: media and discourse produce self-knowledge and “knowledge . . . always passes through media.”¹⁰⁷

The hygienists purported that precise guides for needs and desires (provided by hygienists) would keep the behavior of the modern subject in control by appealing to the body’s “information system,” and by cultivating techniques for making sense of rapidly changing quantities and flows of competing messages. Self-observation and attention, self-measurement and precision, self-semiosis and self-knowledge, self-discipline and continence tend to feed back upon themselves in the regulatory machinery of control systems. Nineteenth-century hygienists Karl Friedrich Burdach, Charles Londe, Jean-Noel Halle referred to this copulation of information and body as the conditioning of the ideal Enlightenment subjectivity: the sentient machine.¹⁰⁸ Beginning with the hygienists, the body becomes disappeared by the proliferation and acceleration of information. There is too much information—it is too thick and too fast—to process, elaborate, make sense of. Affective attention (what Georges Canguilhem called ‘affectivity’) takes time, and without that we have an overstimulated or “anxious” pathological subjectivity unable to adapt to the psychic and cognitive conditions of their environment. Sufferers are survivors; recovery is survival. Humans are “*forced*” to find ways of adaption.¹⁰⁹

Burroughs seizes upon the strategies and resources contemporary capital invests in to create docile subjects: anxiety and attention management. In exemplary disciplinary fashion,¹¹⁰ Dr. Benway’s subjects are always being observed; not for their well-being but for the improvement and efficiency of whatever disciplinary system or control technique is being tried out. Importantly, the doctor doesn’t act alone. He is enveloped by and involved in a political field with a police force augmented by “mentalists” able to penetrate the brains—by observing the minutiae of behaviors and predicting the patterns—of control subjects. For Dr. Benway, threat is the most efficient conditioning technique because it produces in the subject “the appropriate feeling of helplessness and gratitude to the interrogator for withholding it [punishment].”¹¹¹

As we saw with Foucault's Panopticon and Lancaster School examples, threat, made vague and diffuse by distributed surveillance, produces behavior modification on the level of affect regulation in groups, which in turn allows for the self-regulation and automation of mental states. But control introduces something more. Its focus on mind and affect at a deep neurogenetic level appeals to the body's "information system." Self-observation and attention, self-measurement and precision, self-knowledge and semiosis, self-discipline and continence are networked processes comprised almost entirely of informational content. Foucault refers to this as punishment's positive use, and it is where disciplinary society edges into control, with subjugation and exploitation of the body and its habits tied to the co-constitution of the mental habits and mental states of a population.

Reprogramming our biochemistry: Anxiety as foundational to control

Burroughs warns of control techniques that hijack regulatory mechanisms, invade and parasitize consciousness, by neurochemical and affectual engineering that evades critical cognition. When skillfully applied, prolonged mistreatment is productive of anxiety and a feeling of special guilt—both, at the time, were immensely critical to social control. As he observes in *Naked Lunch*: clinical *mistreatment* reduces humans to *neurotic cats* always carrying documents, always being stopped by *the Examiner* [could be any external authority figure], always rushing to meet *impossible deadlines*, always governed by *police with passkeys to their boltless lack of privacy and mentalists assisting in their systemic humiliation*.¹¹² Among the phenomena cybernation normalized were the amplification of anxiety and proliferation of stresses—the argument being these are by-products of the human body's faulty integration with rapidly mutating technological and social systems' requirements. Prolonged and habitual exposure to connectivity drives adaptive systems to seek metabolic homeostasis and escape, so, "connected intelligence" forms the social composition of Burroughs' Interzone in *Naked Lunch*, "where the unknown past and the emergent future meet in a vibrating soundless hum."¹¹³

Interzone is "the Composite City where all human potentials are spread out in a vast silent market. . . . Not a locked door in the City. . . . All houses in the City are joined." Burroughs elaborates later: "The Zone [Interzone] is a single, vast building. The rooms are made of a plastic

cement that bulges to accommodate people.”¹¹⁴ This an apt description of an early era of ergonomic research—the extent of it only discovered retrospectively—in which a more technological and neuro-enhanced behaviorism was being covertly developed via collaboration between governmental agencies, a select group of scientists and medical practitioners, and a robust corporate media-cultural apparatus. In addition to habits and emotions, affects became targets for new modular forms of capitalism. In the extreme, this enhanced behaviorism involved surreptitious intoxication with mind-altering drugs, psychological intimidation, invasive forms of mentalism, desensitization, and other sensory events to stress the metabolic system.¹¹⁵

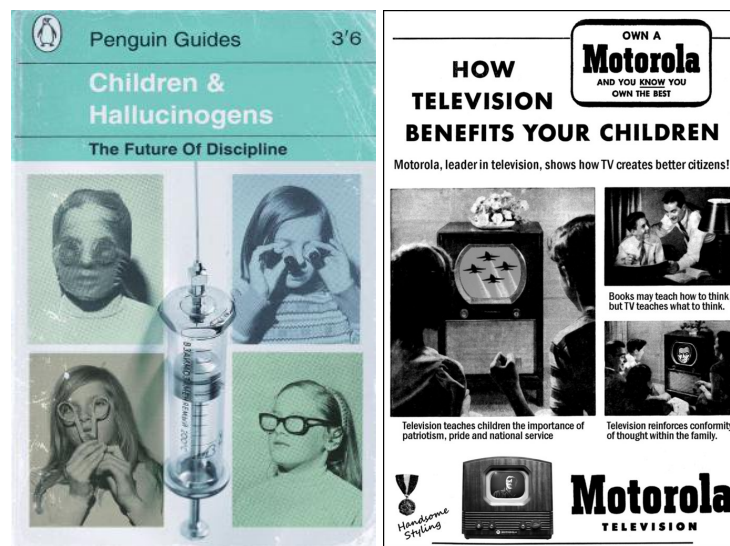


Figure 8.5. Mid-twentieth-century learning futures.

Connected intelligence is a biocontrol apparatus, as Burroughs sees it developing in Interzone, constituted by the grotesque accumulation of everyone’s worst fears, hopelessness, apathies, weaknesses, etc. A collective connective maladaptation, like a viral Twitter or Facebook post that is algorithmically amplified because its animus pings a predictable behavioral stress response. Burroughs’ Interzone is a zone of pure war: all the dwellers of the Interzone were each other’s enemies . . . the only thing that distinguished them was *their ability to increasingly control each other’s sensitivity*. The Interzone was crowded with nomads, fugitives, social outcasts, secret agents, limited liability companies, enterprises and collectives; these people wandered around, plotting like “the Liquefactions,” “the warfare Factualists,” Islam S.A., Anexia, Dr. Benway,

Hassan, etc. The whole war was waged psychologically; why use a gun when they could telepathically introduce dust or smoke, more sinisterly, the “larval state” of a secret police in everyone’s body!¹¹⁶

At the same time Burroughs wrote *Naked Lunch*, medical professionals were beginning to link automation with a new medical model of adaptation and biological stress, conceptualized and popularized by Walter Cannon and Hungarian-Canadian endocrinologist Hans Seyle. Cannon said the body primes itself for action through a fight-or-flight impulse that happens automatically, can be anticipatory, and can be triggered by real or imaginary threats. Seyle explained his model as General Adaption Syndrome (GAS), the subject’s systemic failures in responding to perceptual, psychological, physiological, mental, and environmental stressors.

Burroughs’ accounts of extreme behaviorist experimentation in *Naked Lunch* echo the mind-control programs animated during the 1950s in Cold War America. Key among them were CIA psy-ops involving LSD, BZ, and other powerful hallucinogens and incapacitating agents, massive doses of electro-shock, long-term sensory deprivation, and chemical sleep, which involved “days on end with tape machines playing endless loops of words under their pillows telling them just how awful they were, how they had to change.”¹¹⁷ When Burroughs writes about the engineering of anxiety, he is referring to these mind-control programs (including details hallucinated about those programs conducted in top secret by the US military during and after World War II) in which experimental tests were conducted on “thousands of subjects, many unwitting”¹¹⁸ to find the right biochemical weapon to incapacitate the minds of wartime adversaries, rendering them unable to discern between “real life” and “altered reality,” thereby neutralizing them at the time into isolated machines. In the 1950s, domestic subjects were dosed in psychiatric facilities and prisons; by the 1960s, fields in Vietnam were being aerated with LSD and BZ at the same time US President Richard Nixon was issuing a “war on drugs,” culminating with the Controlled Substances Act in 1970.

In their analysis of Burroughs’ control concept, the Institute for Precarious Consciousness (IPC)—a small theory collective exploring anxiety as the “hegemonic affect of late capitalism”¹¹⁹—refers to anxiety as closely related to precarity, and this relation is emphasized as “an attempt to suggest that anxiety is a socially manufactured affect, rather than a personal deficit

or individual difference.” According to IPC, anxiety is the “dominant reactive affect” of this phase of capitalism and the “latest mutation of biopolitical control.”¹²⁰

Anxiety, as Burroughs might put it, is the finger beckoning toward the unknown future fused with *the finger lurking in the back of one’s mind*. This is how the body perceives threat. Burroughs (via Dr. Benway in *Naked Lunch*) discusses threat as a highly effective conditioning technique that produces in the subject “the appropriate feeling of helplessness and gratitude to the interrogator for withholding it.”¹²¹ Foucault’s graphic description of the torture and discipline of the body of the condemned Damiens in the opening pages of *Discipline & Punish* (forced to bear witness to his own botched execution) expresses itself genealogically as part of a much larger social process ushering the “the age of sobriety in punishment”¹²² and later, the ages of anxiety and their “societies of control.” Threat, made vague and diffuse by distributed surveillance, produces behavior modification on the nonconscious priming level of affect regulation, which in turn allows for the self-regulation and automation of mental states.

Weaponizing neuroscience

Alfred Korzybski—the twentieth-century philosopher Burroughs engages as one of his principal interlocutors—proposed that what differentiates humans from other living things is an inherent capacity to accumulate and transform experience. This, for Korzybski, distinguishes humans as “the *time-binding* class of life” (1921). Deleuze recognized this as characteristic of, and conducive to, the continuous modulation of attention and the maintenance of power: “To be sure, there are all kinds of things left over from disciplinary societies, and this for years on end, but we know already that we are in societies of another sort that should be called, to use the term put forth by William Burroughs—whom Foucault admired greatly—*societies of control*.”¹²³ In control societies, human subjects are used for their “memory banks,” the accumulated experiences and behaviors inherited from past generations. These are in turn used to code neurolinguistic and neurosemantic automatisms that give-receive forms of everyday life in societies of control. Plastic potential is used to maintain societies of control, much like Burroughs’ “junk world” is “the image of the whole world as a structure of addictions and controls.”¹²⁴

In the mid-1950s, Burroughs was piqued by American psychologist Dr. Neal Miller's behavioral experiments on the brains of rats, particularly his discovery that his rodent subjects could be conditioned to alter their brain waves, lower blood pressure, and control digestion by biofeedback stimulation of the brain's punishment and reward mechanisms. Dr. Miller's research scandalized the scientific community with its assumption the autonomic (regulatory) nervous system could be as susceptible to training as the voluntary nervous system. That people could potentially learn to control their heart rate and bowel contractions the same way they learned to express themselves in language was considered horrifying by scientists and thrilling by Burroughs. This, he noted, "establishes that all learning is primarily the same thing."¹²⁵

Comparing capitalist decadence to the conditioning of lab rats and guinea pigs undergoing psychological experiments in electric mazes, Burroughs writes the key to control is keeping "unhappy pleasure-seekers in a condition of unconsummated alertness."¹²⁶ Television and mass media, with their flows of sensations external and visceral, perceptual and affectual, distract and misdirect attention, invade and cannibalize consciousness. Allen Ginsberg, a close friend and frequent editor of Burroughs, explains his friend's concern about the potential trajectory of popular media consumption, how the culmination of communicative media's power is self-cannibalism: "Americans are eating ideas. They're eating conditioning, they're eating television images, they're eating their own hunger, they're eating so the self can get enough of itself."¹²⁷

Anticipating Marshall McLuhan's notion of a technologically extended human by five years, Burroughs writes in *Naked Lunch*: "The study of thinking machines teaches us more about the brain than we can learn by introspective methods. Western man is externalizing himself in the form of gadgets."¹²⁸ He is particularly concerned with human consciousness and experience being auto-self-cannibalized by "inhuman" media machines. With cybernation, it becomes clear the extent to which consciousness exceeds the individual, where it may engage in monstrous, sinister, and perverse acts of self-destruction and contagion. Media extend the body's nervous system, but like drugs as Burroughs repeatedly noted, they eventually mutate the host organism and feed on it—an "act of collective cannibalism" in which "again and again the old environment is upgraded into an art form."¹²⁹ Nanobiologist Robert Freitas calls this phenomenon "ecophagy"—the literal consumption of an ecosystem. Marx describes capitalism in a similar fashion:

capital is dead labour which, vampire-like, only lives by sucking living labour, and lives the more, the more labour it sucks.¹³⁰

In fact, according to Burroughs, capital is even more monstrous than this. It is *autonomically cannibalistic*. In times of crisis, Marx tells us, we witness “the violent destruction of capital, not by relations external to it, but rather as a condition of its self-preservation.” Themes of self-cannibalism and the potential for self-destruction or creation (innovation through difference) can be (and have been) traced from Burroughs to Barthes, to Tarde, to the metaphor of virus propagation popular for more than seven decades of critical media theory, to financialization (in which we all devour ourselves via continuous self-reinvention).

Burroughs was among the first to surmise that because of this autophagy, “control systems are vulnerable. . . . In fact, the more completely hermetic and seemingly successful a control system is, the more vulnerable it becomes.”¹⁵ Subjectivities, increasingly part of larger digital systems with opaque regimes of prediction and control, are constituted by anxiety and “a feeling of special guilt.” This is a special awareness of guilt that Deleuze and Guattari will identify with in *What is Philosophy?*:

We do not feel ourselves outside of our time but continue to undergo shameful compromises with it. . . . We do not lack communication. On the contrary, we have too much of it. We lack creation. *We lack resistance to the present.*¹³¹

Burroughs (via Korzybski) refers to this as the “I” of subvocalization, which virally reproduces itself and through which identity, infection, and the word virus are mutually constituted. For Burroughs, the world of the future mandates participation, and it is in this way the control system cannibalizes consciousness. As McLuhan noted in a 1964 review of *Naked Lunch* and *Nova Express*, Burroughs presents “a paradigm of the future in which there can be no spectators but only participants. All men are totally involved in the insides of all men. There is no privacy and no private parts. In a world in which we are all ingesting and digesting one another there can be no obscenity or pornography or decency. Such is the law of electric media which stretch the nerves to form a global membrane of enclosure.”¹³² These new enclosures—transformed technologies of attention capture composed of stretched nerves as it were—form what behavioral scientists refer

to as “cognitive biases,” and what Korzybski observed in his study of schizophrenic patients as “misevaluation.” Specifically, how in many cases, their language maps did not match the ‘real’ world territory, which reflected pathological cases of misevaluation. Mapped onto the distributed surveillance of Lancaster’s Method, the softer forms of power shape subjects in neurocapitalism as “projects”—active, creative participants in their own algorithmic subjugation—and reterritorialize as epistemic bubbles (aka “filter bubbles”), echo chambers, and new polarizing forms for publics.



Figure 8.6. This is not a chair; or Korzybski via Kosuth.

Burroughs’ control and Leary’s neuropolitics: Resistance through control of the self¹³³

Brainwashing, like malaria, is a disease of exposure. Put people in a malarial environment and most of them will get malaria. Put them in a brainwashing institution and most of them will get brainwashed. —Timothy Leary, *Neuropolitics*

The concept of social control as neuro-invasive mutation by contagion was also explored by experimental psychologist Timothy Leary, particularly with his mid-1970s research on the sociobiology of human metamorphosis. Leary observed what he calls “neuropolitics” at work in Bob Dylan’s creative exploitation of the counterculture and its simultaneity with the Nixon administration’s metaproduction of late 1960s counterculture. In words that echo Burroughs, Leary describes this phenomenon as “*feedback loops between Woodstock and Watergate*,” noting in

particular how dissent simultaneously defies and defines dictatorships, and the necessity of learning how “to take control of our nervous systems and reprogram our individual programs.”¹³⁴

By way of example, Leary explains:

It is not unusual for a man to become a Communist when he lives with Communists, or a convict when he lives with convicts. In fact, it requires delicate neurological engineering to remain oneself under such conditions.¹³⁵

In the broad sense of his inquiry into the sociobiology of human metamorphosis, Leary perceives every level of human experience as continuous, relational, neural-affective circuits of feedback. Without the trappings of connection these circuits provide (Leary calls this “biosecurity”)—for example, without one’s “reality bubble,” “social bubble,” or “filter bubble,” without hive solidarity or hive business as usual—the subject in a state of isolation (with no feedback) is particularly vulnerable to semio-subjugation. The example Leary provides in *Neuropolitics* is the alleged brainwashing of heiress hostage Patty Hearst by the Symbionese Liberation Army (SLA) in 1974. He stresses the irony that Patty/Tania, famously described as the victim of Stockholm syndrome in terms of her kidnapping and transition from victim to enthusiastic member of the SLA, was also the granddaughter of newspaper mogul William Randolph Hearst, and one could, therefore, argue he was responsible for brainwashing far more people than his grandchild’s kidnappers.

Another example is the “*Brave New World* Psy-Tech Control” Leary attributes to American psychiatrist Harrison Gough’s development of the California Psychological Inventory in 1956, a psychometric assessment tool to measure and differentiate more and less socialized individuals. It is still widely used by prospective employers to extract detailed information from applicants about their habits and “personality themes.” Gough’s empiricism is the model for the “you are your data” self-tracking imperative of algorithmic capitalism, with its arsenal of automated ways of making sense by correlation rather than comprehension, including data mining and predictive analytics, sentiment analysis, prediction markets, body-language analysis, and neuromarketing.¹³⁶

Leary writes in *Neuropolitics*: “Compared to every other species, the human being is in continual metamorphosis. Indeed, the outstanding neurogenetic characteristic of the human is this continual larval change. *Homo protean*.” Leary described a postwar world populated by techno-enhanced mutants with “continuous power output, direct coupling, audible spectrum, low noise

transmission, high circuit reliability, superb capture rate, excellent selectivity.”¹³⁷ Leary attributes the emergence of this new mutant species in 1945 not only to nuclear events at Alamogordo, Nagasaki and Hiroshima, but to “neuro-electronic consumerism,” specifically television consumption. In *The Intelligence Agents*, he writes: “Every American child born after 1945 crawled out of the crib, toddled across the room, and with tiny, chubby baby hands reached the boob tube and began *dialing and tuning realities*.”¹³⁸ Leary anticipates the neurochemical potential of neuro-electronic consumerism to create a single, cyborgian brain that traffics in attention, publicity (including public memory), addiction, connection.

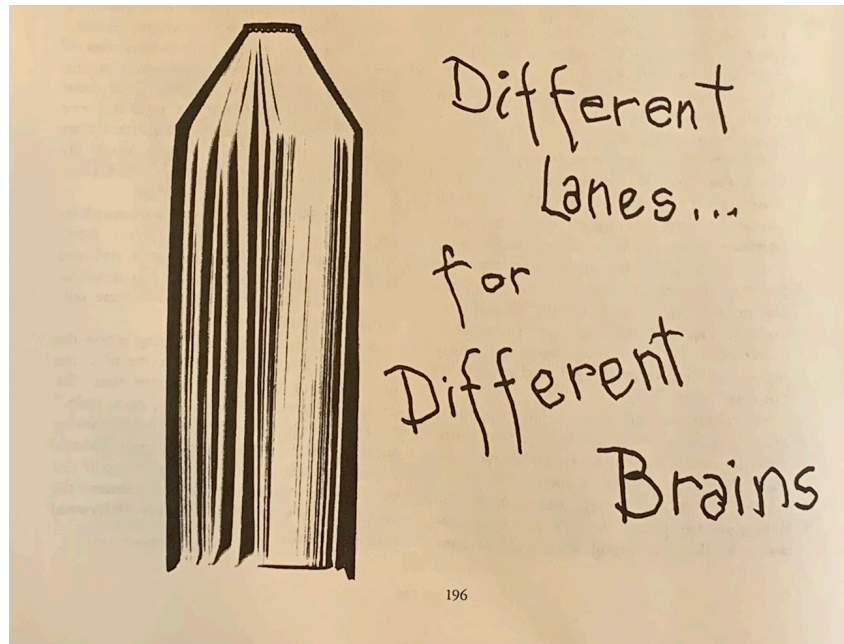


Figure 8.7. “Different Lanes for Different Brains.” A page-spread from Leary’s *Neuropolitics*.

Cognitive capitalism’s global mandate for constant connectivity is expressed by Burroughs as a cannibalization of collective consciousness: “All men are totally involved in the insides of all men. There is no privacy and no private parts in a world in which we are all ingesting and digesting one another.” This is why Leary advises his readers: “We must assume responsibility for our nervous systems.”¹³⁹

Situating Burroughs: Schizo-Culture, “The Event” (1975)

That which is aboveground is spectacle, is control, is apparatus. That which is underground is what?¹⁴⁰

The post-Marxist theory collective *Obsolete Capitalism's Control, Modulation, and Algebra of Evil in Burroughs and Deleuze* (2018) looks at what they call the “intellectual and political convergence” of Burroughs and Deleuze around the concept of control.¹⁴¹ Both of our texts trace this convergence to an event—a two-day academic colloquium organized by Sylvère Lotringer and John Rajchman at Columbia University in 1975 called “Schizo-Culture.” Features of the Schizo-Culture convergence also mutated into an early issue of the recently launched *Semiotext(e)* journal that included contributions from Burroughs (“The Limits of Control”), Foucault (“The Eye of Power”), and Deleuze (“Politics”).

Obsolete Capitalism's investigation constructs a cartography for Burroughs' control diagram, such that his physical movement in the world is transversally mapped as progressive resistances and modes of emancipation: (Oceanic Line 1: St. Louis – Vienna – Tangier / First centre of resistance, the body; Oceanic Line 2: Tangier – Paris – Boston / Second center of resistance, the libido; Oceanic Line 3: London – Tangier (via Alamut) / Third centre of resistance, the virus of rebellion; Oceanic Line 4: London – New York – Paris / Fourth centre of resistance, schizo-culture). At the apotheosis for *Obsolete Capitalism* then, is the Schizo-Culture event. When asked by Lotringer, at the conference, “What is schizo-culture?” Burroughs answered: “I think that ‘schizo-culture’ is being used here in a special sense, not referring so much to clinical schizophrenia but to the fact that culture is divided up into all sorts of classes and groups, et cetera, and some of the old lines are breaking down, and this is a healthy sign.”¹⁴²

The event not only introduced the most outré members of New York's underground scene to the new constellation of radical theory emerging out of May 1968 in Paris but also served to gather forces in a “schizoid” political movement to discuss tactics for breaking down social controls vis-à-vis war, capitalism, prisons, patriarchal oppression, new psychopathologies and their co-constituent semiotic and cultural microfascisms.

Schizo-Culture's presentations and events coalesced around theorizing control as "disturbances" and relations of forces exacerbated by the amplifying feedback of mainstream media. One participant at the conference identified Burroughs the primary source of this theorizing:

On the evening of the second day [of the Schizo-Culture colloquium], William Burroughs, crotchety and abrupt, talked about how the powerful grow weak in protecting themselves against the people they have hired to protect them; how trying to kill a story makes it news; how controllers of colonies become more stupid and short-sighted than those they control; and how dangerous governments can be when they're in the process of defeating themselves.¹⁴³

It was in *Naked Lunch* that Burroughs first limned organized civil society with the invisible underworld of drug addicts. Well-behaved, mainstream capitalist subjects are conditioned and reproduced by "repressing their entire perceptive semiotics, all their problems."¹⁴⁴ As JG Ballard acknowledged in a 1966 review of Burroughs' work, the two worlds of civil society and underground of drug addicts were not different, "certainly at the points where they make the closest contact—in prisons and psychiatric institutions."¹⁴⁵ The new forms of control make concessions to addiction. Ballard referred to this as "the moral arithmetic of the 1960s"¹⁴⁶ and Burroughs referred to its counterpart as "the algebra of need," which is different in that it involves the hijacking of metabolic regulatory systems by an appetite that knows no limits and targets the reactive mind, everyone's "built-in electronic police force armed with hideous threats." Burroughs implies social and media mutation—with all the inherent ambivalence of mutation/adaptation—are instrumental to composing societies of control. At times, it appears in the aura of 1960s-style liberation (change is, by definition, desirable). At other moments, the experiments on mutations lead in different directions with different outcomes. How to assess mutants?

These same organizations, the confluences of corporeal and semiotic subjugation enacted on prisoners and psychiatric patients, were foci of the post-Marxist radical left emerging from May 1968. Indeed, it's not surprising in the context of radical politics that these institutions were headlining subjects of the Schizo-Culture event at Columbia University in 1975, organized by Columbia professor and Semiotext(e) publisher Sylvère Lotringer with his then-PhD student, John Rajchman. As an institutionalized academic conference, the colloquium is credited with

introducing a new minor theoretical constellation of French theorists (Foucault-Deleuze-Guattari) to replace the institutionally sacrosanct trinity of Freud-Marx-Saussure. But that's not who the catalyzing agents of this historical event are. This event also put Burroughs in direct contact with Deleuze and Foucault soon after Deleuze and Guattari's *Anti-Oedipe* (1972) and Foucault's *Souvenir et Punir* (1975) were first published. It is where Deleuze first met and spoke with Burroughs about his concept of control, and where Deleuze heard Burroughs deliver his essay "The Impasses of Control."¹⁴⁷

In the mid-1970s, Burroughs stated that his goal as a cultural force was to study and create resources for "the expansion of awareness, eventually leading to mutations."¹⁴⁸ In reading various participants' accounts of the conference, control is the constant feedback, occurring simultaneously on many levels, that Guattari refers to as *semiotic subjugation*.¹⁴⁹ Semiotization is the subjugation of all modes of meaning—perception, movement, language, etc.—"to the dominant language, the language of power."¹⁵⁰

Participants in Schizo-Culture—an unusually diverse (for an academic conference) mix of scholars and students, conceptual artists and musicians, experimental filmmakers, counterculture pop figures, militant left organizers, activists, Marxists, former and future political prisoners, psychiatric patients and unorthodox psychoanalysts, etc.—were unified in expressing contemporary forms of micropolitical power in terms of "violence to the brain."¹⁵¹ According to Schizo-Culture presenter Judith Clark (Weather Underground) and journal contributor Eddie Griffin (Black Panther Party)—both of whom were incarcerated as political enemies of the state—behavioral modification laboratories and mind-control techniques were being innovated in prisons not only to break inmates of their will to resist but to *train* them in "pure capitalist ethics," in preparation for their new roles in civic society upon their release. Their training would not only keep them submissive (to capital), but also geared toward competition rather than cooperation, and would therefore ensure they were *productively disconnected from others*.¹⁵²

Clark focused much of her discussion on the particular use of behavior modification "against people who are organizing inside and rebelling against the conditions inside. It began as a reform under the basic assumption that prisoners are in prison not because they can't survive on the streets, but because of some maladjustments. So they should be readjusted."¹⁵³ The Start

Program in Marion, Illinois—possibly the most abusive of these programs—began in 1968 to place political prisoners and prisoners involved in organizing against conditions in the prison or exhibiting any degree of resistance to the institutional ordering of the prison or the world beyond it as into a behavioral modification program referred to as “CARE” or Control And Rehabilitation Effort. The program was accelerated in 1983, when two prison guards were killed at Marion, it went into a long-term lockdown and at the same time became a “Control Unit” operating directly on the psyche of selected inmates by experimenting with the effects of solitary confinement, and other forms of psychological torture. However, it is also a “learning opportunity”:

What you learn from the prison system is that they can set up the most monolithic and terrifying kinds of oppression; people will continue to resist them. The human spirit does not get broken. It maintains itself by building a unity among each other. People define the problem and understand it. They analyze the conditions used against them and realize that their major weapon is their own unity. They realize that their unity is in fact greater than the technology used against them and that, in the protracted struggle, the prisoners will win.¹⁵⁴

Griffin spoke about the subjective threat of readjustment in the “Control Unit” at Marion as the employment of solitary confinement as a control strategy to nullify any sense of connection among the prisoners, who in effect occupied a prison within a prison:

. . . those who entered would never see the sun again until their release. Others would claim the Control Unit at Marion was underground, and whoever was placed there would spend the rest of their sentence in it. *No one really knew for sure* because, up until then, *no prisoner returned* to Terre Haute from Marion. *Real or unreal, a dread grew up around the myths. Whatever existed behind the walls of Marion generated apprehension* of a legal form of assassination. . . . A man is told to conform to the institution, or he will be sent to Marion to have his behavior ‘corrected.’ *The thought of being ‘corrected’ by an unknown means has a chilling effect on the senses, and it tends to sterilize any resistance which might exist in prison populations.*¹⁵⁵

A number of presentations at the colloquium discuss how such psychological techniques were being used regularly in a broader social context. In fact, the whole society was increasingly becoming a behavior modification laboratory and “a continuous web of micro-controls that simultaneously produce and enslave, differentiate and normalize individuals.”¹⁵⁶ The behaviorist

program in the prison movement at the time, according to Clark, largely saw inmates as predetermined to “end up in a series of institutions”: juvenile care facilities, “oftentimes” a mental institution, then prison.¹⁵⁷ At the time, R.D. Laing described such behaviorist methods as analogous to instrumentalizing or mechanizing humans to develop “normal” reactions to abnormal conditions, to render them docile yet anxious subjects and, eventually, to develop better machines by pinging our autonomic behaviors.

Burroughs argues in his presentation “The Impasses of Control” [the basis for his paper “The Limits of Control”] that “all modern control systems are riddled with contradictions”; that if one controls everything then one controls nothing because “control also needs opposition and acquiescence; otherwise it ceases to be control.” He discusses how new technocratic forms of power, and new techniques of mind control in particular, are externalizing consciousness in the service of power to the extent that our nervous systems may become completely controlled and “even the thought of rebellion is neurologically impossible.”¹⁵⁸ This is the impasse, as it is discussed in a Q&A with Burroughs after his presentation: *if fascism is to develop it has to develop either through a growth in the demand to be controlled or, . . . in the growth of the control of the demand to be controlled.*¹⁵⁹ This is why, Burroughs argues here, despite the US’ outside appearance (delimited) as open to forces of cultural change, and to cultural revolutions, its top-secret experiments in mind control and behavior modification (on some of the most vulnerable of its own citizens, without their consent) should be eyed warily, because these are the test sites of the new forms of power, the performance of techniques being developed to control the minds of publics.

Epilogue to the event

When the event was hosted in New York City in 1975, the US and its major cities were crisis-ridden and broken-down, driven by austerity and fear. As one conference attendee remarked at the time, “more has to be understood about the despair of living in the United States in 1975. We have given up on lucidity; our socioeconomic situation seems too murky to lend itself to analysis. We are too confused by the facts of our oppression—by the real facts, such as no jobs, a city about to default, news media reduced to the point where information becomes unavailable. Our French

visitors came to us with an optimism which to us seemed glib and bizarre.”¹⁶⁰ R.D. Laing characterizes this inscrutability as “ontological insecurity,” his term for schizophrenia in *The Divided Self* (1960). It is “a profound personal uncertainty about the boundaries between the self and the world” as opposed to the ego-boundaries that are shaped by the infant. Secure “being in the world” requires social interaction between people: human connection.

In *The Third Mind*, Burroughs and Gysin adopt a refrain from T.S. Eliot’s “The Wasteland” that reflects the “collaborative consciousness” the cut-up method recommends against microfascist contamination, semiotic contamination, and ontological insecurity: “Who is the third who always walks beside you?” It is a third mind free of the restrictions of context, culture, and subjectivity. It is the possibility of new associations, new points of intersection and connection. They theorize the cut-up as connectivity: “cut-ups establish new connections.” “Cut-ups,” Burroughs explains, “make explicit a psycho-sensory process that is going on all the time anyway. Somebody is reading a newspaper, and his eye follows the column in the proper Aristotelian manner, one idea and sentence at a time. But subliminally he is reading the columns on either side and is aware of the person sitting next to him. That’s a cut-up.”¹⁶¹

The event known as Schizo-Culture “disappeared almost as soon as it happened,” co-organizer Jonathan Rajchman acknowledges, but its impact on continental philosophy—and academia in general—is huge. Before the publication of this book (packaged as a two-volume work in a special slipcase: a retrospective archive of found material from the conference in 1975,¹⁶² along with a reproduction of the better known 1978 journal issue), there was very little attention to this event.¹⁶³ The original event was documented more like a happening than an academic conference; that is, without any plan or concept for the preservation of the event. Even the journal issue that was devoted to the Schizo-Culture topic (produced three years later) was related only insofar as it included some of the same participants, on the same themes.¹⁶⁴

Despite its apparent obscurity, this event and the collaborations and intersections it catalyzed radically changed the shape of contemporary critical theory and of Semiotext(e) itself. Although Lotringer purports to have wanted it that way—to not make Schizo-Culture co-optable by fashion or academia or to make a new *theoretical ghetto*—by 2013, his vision, or perception of the event, had obviously changed. Not only was *Schizo-Culture* re-released in shiny, fetishy new

packaging as a two-volume historical document/archival art object: *Schizo-Culture: The Event* and *Schizo-Culture: The Book*—it was also a featured event at high-profile venues, such as MoMA, with funding supplemented by corporations, including a “partnership with Volkswagen of America.”¹⁶⁵

In the introduction to the volume on the event, Lotringer discusses why he organized academic-political-social-art convergence highlighting the connections between a Burroughsian near-past (1950s-era cybernation and addiction culture vis-à-vis *Naked Lunch*, *The Nova Trilogy*, the cut-ups) and post-1968 French thought, in the broader context of 1970s radical politics and subcultures. His answer: “Nothing . . . is ever just one thing. Psychoanalysis has to do with politics, politics has to do with madness, madness has to do with creation, creation with drugs, drugs with prisons, prisons with asylums, asylums with the university, the university with Capital, and Capital with desire.”¹⁶⁶ Importantly, two pages later he pivots, refusing to continue his role as interlocutor of the event: “Don’t for instance, ask me what this colloquium means, but rather, what do *you* want to do with it?”¹⁶⁷ I read this as an echo of Burroughs’ “wouldn’t you?” which cuts transversally across the entire expanded control diagram.

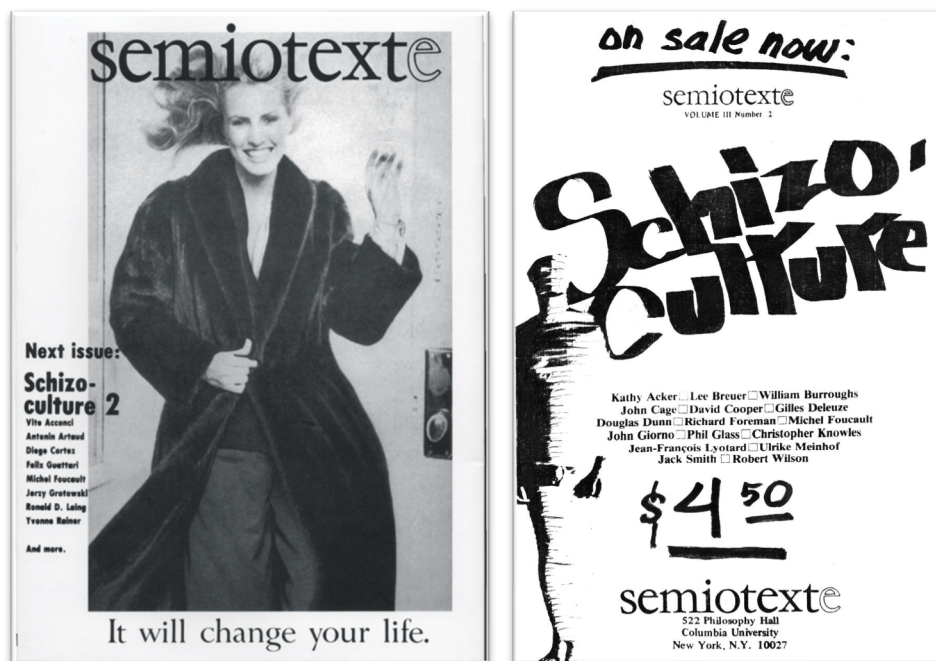


Figure 8.8. The back cover and front cover of the “Schizo-Culture” issue of *Semiotext(e)* 3, no. 2 (1978).

Conclusion: Mutating Control with Doing Easy

Did you ever go clear? —Leonard Cohen, “Famous Blue Raincoat” (1971)

For Burroughs, the limits of control are that it can only ever be partial, for without resistance, control is a meaningless proposition. ‘Resistance is useless’ bears within it the complementary logic that it is in fact relationally useful for those who wield power because “[a]ll modern control systems are riddled with contradictions.”¹⁶⁸ The new forms of control—nonlinear, accelerated, open-ended, incontinent—make concessions to the “disturbed” neuropolitical affective circuits Leary and Bateson recognized in schizophrenics and alcoholics respectively. Burroughs saw this as a process of endocolonization—technologies of powers’ total domination, modulation, and assimilation of technologies of the self as an act of self-annihilation [self-cancellation].

“Doing Easy” offers itself as a counterphilosophy, a way of learning how to learn. Although he doesn’t explicitly refer to Doing Easy in *Naked Lunch*, he describes the method:

I sat back letting my mind work without pushing it. Push your mind too hard, and it will fuck up like an overloaded switchboard or turn on you with sabotage. And I had no margin for error. Americans have a special horror for giving up control, of letting things happen in their own way without interference. They would like to jump down into their stomachs and digest the food and shovel the shit out.

Your mind will answer most questions if you learn to relax and wait for the answer. Like one of those thinking machines, you feed in your question, sit back, and wait.¹⁶⁹

Burroughs describes the book as “a blueprint, a How-To Book. . . . How-to extend levels of experience by opening the door at the end of a long hall. . . . Doors that only open in *Silence*. . . . *Naked Lunch* demands Silence from The Reader. Otherwise he is taking his own pulse. . . .”¹⁷⁰

Recall how we have discussed how the formation of publics was at one time taken as a time-consuming process of mutual enlightenment through the work and effort of dialogic conversation and ‘thinking with’ others. In Burroughs’ fictional city of Interzone, everything is a conduit for flows of information, reterritorializes in contemporary capitalism as epistemic bubbles, echo chambers, and online performances of the self where individuals serve active, even creative,

roles in their own subjugation. Nigel Thrift refers to this as *premeditation*, the “ways in which imitative processes can be consciously and carefully steered . . . [via] neural bindages.”¹⁷¹ Deleuze observed this too, from disciplinary society’s molds to the modulations of societies of control, the structures, subjectivities, and relations taken as somewhat “macro” and stable forms of social life are constantly engaging in nanopolitical, “infinitesimal social adaptation.”¹⁷²

Open-ended neuropower involves the metabolic reengineering of an attention ecology geared toward relationships with information that exceeds human cognition and within platforms controlled by immensely powerful self-interests. Social media platforms like Facebook purport to have a mission to create a “more connected world” but as sociologist Colleen Eren argues, the platform “falsely presents the image of a concerned community, a network somehow constantly embedded in each others’ lives.”¹⁷³ Despite Zuckerberg’s insistence that “outraged users are part of a feedback mechanism that feeds the evolution of the platform,” does the platform-as-public hold up to scrutiny?¹⁷⁴ Online lives, inextricably algorithmic, become serial performances of social capital, appellations to an algorithmically sanctioned mass and not to formations of “social intelligence” or critical co-presence that animate the affects, social unity, and metamorphoses of plastic publics.

I read Burroughs’ “wouldn’t you?” differently than it has been proposed, by Eric Mottram for example, as a plaintive refrain of the “Algebra of Need,” the junkie’s grotesque incontinence. I read it instead as an incantation, a challenge, and an instruction, to attain enough self-awareness to observe our own willing participation in control’s smooth functioning, to disrupt the feedback, to reclaim existence from control societies. Burroughs’ Discipline of DE [Do Easy] calls for the cultivation of a self-organized, open-focused state of consciousness:

Consider these extensions of yourself (familiar objects) as precision instruments to perform every move smoothly and well. . . . Handle objects with consideration and they will show you all their little tricks. . . . *Remember every object has its place.*

A soapy hand on your lower back feeling the muscles and vertebrae can catch a dislocation right there and save you a visit to the osteopath. Illness and disability is largely a matter of neglect. You ignore something because it is painful and it becomes more uncomfortable through neglect and you neglect it further.

DE refers to ALL operations carried on inside the body . . . brain waves, digestion, blood pressure and rate of heart beats . . . and that is another chapter.¹⁷⁵

Wouldn't you?

Notes

¹ William S. Burroughs, “Tactics of Deconditioning,” in *Burroughs Live: The Collected Interviews of William S. Burroughs, 1960–1997*, ed. Sylvère Lotringer (Los Angeles and New York: Semiotext(e), 2001), 125.

² Joan Didion, “Wired for Shock Treatments: A Review of William S. Burroughs, *The Soft Machine* (1966),” *Bookweek*, March 27, 1966, <https://beatpatrol.wordpress.com/2009/02/26/william-s-burroughs-the-soft-machine-1966-2/>.

³ William S. Burroughs, “The Invisible Generation” (1966), reprinted in *Audio Culture: Readings in Modern Music* (rev. ed.), ed. Christoph Cox and Daniel Warner (New York: Bloomsbury, 2017), 597.

⁴ See Janet Dean Fodor, “Psycholinguistics Cannot Escape Prosody,” Proceedings on the 1st International Conference on Speech Prosody, Aix-en-Provence, France, April 11–13, 2002. Prosody has yet to get the attention it deserves, but I first encountered its importance as meditative practice via an opportunity to participate in Autonomedia author Robert Kocik’s Prosodic Body project in the early 2000s. See <https://www.robertkocik.com/prosodic-body>.

⁵ Cameron McEwen, “Defining the Understanding Media project,” *McLuhan’s New Sciences*, April 2020, <https://mcluhansnewsocieties.com/mcluhan/2020/04/defining-the-understanding-media-project/#fn-54496-4>.

⁶ Marshall McLuhan, “Notes on Burroughs,” *The Nation* 199, no. 21 (1964): 517–519. See *Reality Studio*, <https://realitystudio.org/criticism/notes-on-burroughs/>.

⁷ Aldous Huxley, *Brave New World and Brave New World Revisited* (Toronto: Vintage Canada, 2007).

⁸ At some point in the near future, I would like to reevaluate this chapter in light of new techniques for AI-led computational governance of plastic publics.

⁹ Christopher Land, “Apomorphine Silence: Cutting-up Burroughs’ Theory of Language and Control,” *ephemera: theory & politics in organization* 5, no. 3 (2005): 453.

¹⁰ William Burroughs, *The Electronic Revolution* (Berlin: Expanded Media Editions, 1970), https://www.ubu.com/historical/burroughs/electronic_revolution.pdf.

¹¹ Joint Hearing Before the Select Committee on Intelligence and the Subcommittee on Health and Scientific Research of the Committee on Human Resources, United States Senate, Ninety-Fifth Congress, First Session, August 3, 1977, <https://www.intelligence.senate.gov/sites/default/files/hearings/95mkultra.pdf>.

¹² William S. Burroughs, “Do You Remember Tomorrow?,” *Mayfair* 3, no. 8 (August 1968).

¹³ William S. Burroughs, *The Ticket that Exploded: The Restored Text* (New York: Grove Press, 2014/1962), 213.

¹⁴ William S. Burroughs and Brion Gysin, *The Third Mind* (New York: The Viking Press, 1978).

¹⁵ William S. Burroughs, *Naked Lunch: The Restored Text*, ed. James Grauerholz and Barry Miles (New York: Grove Press, 2001), 216.

¹⁶ In William Burroughs’ frequently cited introduction to *Queer*, he writes: “I live with the constant threat of possession, and a constant need to escape from possession, from Control.” See William S. Burroughs, *Queer: A Novel* (New York: Viking Press, 1985).

¹⁷ William S. Burroughs, “I, William Burroughs, Challenge You, L. Ron Hubbard,” *Mayfair* 5, no. 1 (March 1970): 58.

¹⁸ *Mayfair* was launched in 1965 as a “gentlemen’s entertainment magazine” modeled on the success of *Playboy*. Its editor, Graham Masterson, commissioned Burroughs to write a series of articles for the magazine, which became the “Mayfair Academy” project. The articles appeared in *Mayfair* between October 1967–November 1969. See Dave Teeuwen, “Interview with Graham Masterson on William S. Burroughs, November 2, 2009,” <https://realitystudio.org/interviews/interview-with-graham-masterson-on-william-s-burroughs/>.

¹⁹ In a future iteration of this project, I would like to engage more with the William S. Burroughs Papers at the New York Public Library, which holds extensive handwritten notes Burroughs took on his Scientology training, from auditing sessions he conducted, and his cut-ups of auditing questions.

²⁰ See The Church of Scientology, What Is Scientology?, “Glossary of Scientology & Dianetics Terms,” <https://www.whatisscientology.org/html/Part14/Chp50/pg1019-a.html> and “State of Clear,” <https://www.whatisscientology.org/html/Part03/Chp13/pg0245.html>.

²¹ Samuel Smiles’ *Self-Help, with Illustrations of Character and Conduct* (London: John Murray, 1897/1859), <https://www.gutenberg.org/cache/epub/935/pg935-images.html>, was a vastly popular for the time self-help book, based on a series of lectures on self-improvement given to an audience of exclusively young British men.

²² By way of example, see Smiles, *Self-Help*, 36, 37, 115, 141, 143, 286.

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- ²³ Smiles, *Self-Help*, 318.
- ²⁴ William S. Burroughs and Daniel Odier, *The Job: Interviews with William S. Burroughs* (New York: Penguin Books, 1989/1969), 13.
- ²⁵ William S. Burroughs, *The Soft Machine* (New York: Grove Press, 1966/1961), 90.
- ²⁶ Burroughs, *The Soft Machine*, 100.
- ²⁷ Burroughs, *The Soft Machine*, 148–149.
- ²⁸ Burroughs and Odier, *The Job*, 40.
- ²⁹ See L. Ron Hubbard, *Dianetics* (Los Angeles: Bridge Publications, Inc., 2007/1950), 1. In Hubbard’s writings, an engram is described as a “cellular level recording” that includes physical and emotional pain.
- ³⁰ Perry Scott, “Scientology Training Routines: A Critical Review,” nd, <https://www.cs.cmu.edu/~dst/Secrets/TR/critique.html>.
- ³¹ Burroughs, “Tactics of Deconditioning,” in *Burroughs Live*, 125.
- ³² Hubbard, *Dianetics*, np.
- ³³ Tony Ortega, “The Mother and Child Reunion: Another *Dianetics* Nightmare,” *The Underground Bunker*, March 21, 2013, <https://tonyortega.org/2013/03/21/the-mother-and-child-reunion-another-dianetics-nightmare/>.
- ³⁴ See William S. Burroughs, “I, William Burroughs, Challenge You, L. Ron Hubbard”; William S. Burroughs, *Ali’s Smile/Naked Scientology* (Bonn: Expanded Media Editions, 1978/1971); David S. Willis, *Scientologist! William S. Burroughs and the ‘Weird Cult’* (Beatdom Books: 2013).
- ³⁵ Geoff McMaster, “Once thriving Church of Scientology faces extinction, says cult tracker,” University of Alberta Folio, January 11, 2018, <https://www.ualberta.ca/folio/2018/01/once-thriving-church-of-scientology-faces-extinction-says-cult-tracker.html>.
- ³⁶ See Burroughs, “I, William Burroughs, Challenge You, L. Ron Hubbard”; Burroughs, *Ali’s Smile/Naked Scientology*.
- ³⁷ Ted Morgan, *Literary Outlaw: The Life and Times of William S. Burroughs* (New York and London: W. W. Norton and Company, 1988), 741.
- ³⁸ Cyril Vosper, *The Mind Benders* (London: Neville Spearman Limited, 1971), <https://www.apologeticsindex.org/The%20Mind%20Benders.pdf>.
- ³⁹ Kathelin Gray, “William S. Burroughs and the Biosphere, 1974–1997,” *LA Review of Books*, May 20, 2018, <https://lareviewofbooks.org/article/william-s-burroughs-and-the-biosphere-1974-1997>.
- ⁴⁰ William S. Burroughs, *Interzone*, ed. James Grauerholz (New York: Viking, 1989), 136.
- ⁴¹ See Kate Eichhorn, *The End of Forgetting: Growing Up with Social Media* (Cambridge, MA and London: Harvard University Press, 2019). See also, the concept of the “enduring ephemeral” described in Wendy Chun in *Programmed Visions: Software and Memory* (Cambridge, MA and London: The MIT Press, 2011), 10 and 95.
- ⁴² William S. Burroughs, “The Death of Opium Jones,” *New Statesman* 71, no. 1826 (March 11, 1966), <https://www.newstatesman.com/archive/2014/02/say-it-country-simple-most-folks-enjoy-junk-william-s-burroughs-addiction-rehab-and>. See also Burroughs’ cut-up text *Health Bulletin: APO-33 Bulletin, A Metabolic Regulator* (New York: Fuck You Press, 1965).
- ⁴³ Burroughs, *Naked Lunch*, xi.
- ⁴⁴ Burroughs talks about continuous modification of control in “Schizo-Culture” interview with Sylvère Lotringer (1975) and in other conversations with Lotringer; see, for example, *Burroughs Live: The Collected Interviews of William S. Burroughs* (Los Angeles and New York: Semiotext(e), 2001), 328–329.
- ⁴⁵ As discussed in Chapter 7, this refers to the CIA’s program of research in behavioral modification, which began in the 1940s with Project BLUEBIRD, involved using mind-control drugs and techniques on American citizens, mostly in federal penitentiaries or on military bases, often without their knowledge and hence, without their consent. It was followed by Project ARTICHOKE, a mind-control program—also using LSD and other narcotics, hypnosis, and isolation—to determine whether society’s “less-intelligent” (expendable) subjects could be subliminally trained to assassinate political enemies. Project MK ULTRA was a psy-ops project of the US government spanning 1953–mid-1970s. MK ULTRA was a “black-boxed” operation, but some information about breadth and depth of governmental resources given to research in “the use of biological and chemical materials in altering human behavior,” according to the official testimony of CIA director Stansfield Turner in 1977, has been revealed over time with FOIAs. In the past few years alone, there have been numerous articles on the fascinating ‘top-secret history’ of MK ULTRA, as new documents are discovered and made available. For example, <https://www.cia.gov/library/readingroom/docs/CIA-RDP88-01070R000301530003-5.pdf>.

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- ⁴⁶ William S. Burroughs, “The Limits of Control,” *Schizo-Culture: The Book*, ed. Sylvère Lotringer (South Pasadena, CA: Semiotext(e), 2013), 38.
- ⁴⁷ Burroughs, *Naked Lunch*, 21.
- ⁴⁸ See Burroughs interview with George McFadden and Robert Mayoh, “Death Isn’t Necessarily Final” (1974), in *Burroughs Live*, 261–270. This interview was conducted in NYC while Burroughs was a guest professor at CCNY.
- ⁴⁹ William S. Burroughs, “The Time-Birth-Death Gimmick,” in *Burroughs Live*, 43.
- ⁵⁰ See Sylvère Lotringer, *Schizo-Culture: The Event*, ed. Sylvère Lotringer and David Morris (South Pasadena, CA: Semiotext(e), 2013). See also Sylvère Lotringer, “Anti-Oedipus: From Psychoanalysis to Schizopolitics,” *Semiotext(e)* 11, no. 3 (1977).
- ⁵¹ Foucault and Burroughs headlined this event, co-organized by Sylvère Lotringer and John Rajchman at Columbia University, November 14–16, 1975. See Michel Foucault, “We Are Not Repressed,” in *Schizo-Culture: The Event*, 146–147. Here, Foucault is speaking specifically about negative feedback techniques, such as psychic “readjustments” via the Asklepieion therapeutic method, a combination of techniques from the “attack therapy” developed at infamous drug rehab/cult Synanon and the theory of transactional analysis associated with Canadian-born psychiatrist Eric Berne. Synanon provides an almost perfect example of how a control machine operates. This particular group therapy technique used at Synanon—an attack therapy called “the Game”—involved confrontation, psychological intimidation, the encouragement of verbal and physical abuse, isolation, the rigid institution of rules regarding behavior which are later restored in a limited capacity that seems like absolute freedom. This so-called “tear them down in order to build them up” approach is oriented at the subject’s self-image and is credited as part of what contributed to Synanon’s transformation from drug rehabilitation center to cult. Eventually, this would be revealed as how Scientology operates as well.
- ⁵² Barbara Cassin (ed.), *Dictionary of Untranslatables: A Philosophical Lexicon* (Princeton: Princeton University Press, 2017), <https://www.oxfordreference.com/view/10.1093/acref/9780190681166.001.0001/acref-9780190681166-e-21>; <https://www.oxfordreference.com/view/10.1093/acref/9780190681166.001.0001/acref-9780190681166-e-251>. See also, Adam Kotsko, “A Question on the Translation of the Hegelian *Aufhebung*,” *An und für sich*, December 2, 2007, <https://itself.blog/2007/12/02/a-question-on-the-translation-of-the-hegelian-aufhebung/>.
- ⁵³ Catherine Malabou, “History and the process of mourning in Hegel and Freud,” *Radical Philosophy* 106 (March/April 2001): 17.
- ⁵⁴ Michel Foucault, “The Eye of Power,” *Semiotext(e)* 3, no. 2 [aka, the “Schizo-Culture issue”] (1978): 12–13.
- ⁵⁵ Warren Neidich (ed.), *An Activist Neuroaesthetics Reader* (Berlin: Archive Books, 2021), 12.
- ⁵⁶ Malabou, *Ontology of the Accident*, 4.
- ⁵⁷ Gilles Deleuze, “Postscript on Control Societies,” *Negotiations*, trans. Martin Joughin (New York: Columbia University Press, 1995), 178.
- ⁵⁸ Derrick de Kerckhove, *The Skin of Culture: Investigating the New Electronic Reality*, ed. Christopher Dewdney (London: Kogan Page, 1997/1995), 5.
- ⁵⁹ William S. Burroughs, “The Limits of Control,” *Schizo-Culture: The Book*, ed. Sylvère Lotringer (South Pasadena, CA: Semiotext(e), 2013), 38.
- ⁶⁰ Obsolete Capitalism, *Control, Modulation and Algebra of Evil in Burroughs and Deleuze* (Reggio Emilia: Rzosfera 2018), 18.
- ⁶¹ William S. Burroughs, *Nova Express* (New York: Grove Press, 1992/1964).
- ⁶² William S. Burroughs, *Interzone*, ed. James Grauerholz (New York: Penguin Books, 1990), 131.
- ⁶³ Burroughs, *Naked Lunch*, xi.
- ⁶⁴ The introduction of *Naked Lunch* is Burroughs’ first-person account of addiction—or any form of metabolic dysregulation—and the extent to which it is controlled by an abstracted social power; the suppressed success of the metabolic regulator apomorphine, which Burroughs credits with curing him of/reprogramming his addiction to heroin; the dysregulations of capitalism.
- ⁶⁵ Gilles Deleuze, “Control and Becoming,” *Negotiations, 1972–1990*, trans. Martin Joughin (New York: Columbia University Press, 1995), 174.

- ⁶⁶ By the public, Tarde understands the public of the media, the public of a newspaper: “the invention of printing has caused a very different type of public to appear, one which never ceases to grow and whose indefinite extension is one of the most clearly marked traits of our period.” See Gabriel Tarde, “The Public and the Crowd,” in *Gabriel Tarde: On Communication and Social Influence, Selected Papers*, ed. Terry N. Clark (Chicago and London: University of Chicago Press, 1969), 277. Tarde’s essay was originally published as “Le Public et la Foule” (1898) in *La Revue de Paris*. It later appeared in Gabriel Tarde, *L’opinion et la foule* (Paris: Félix Alcan, 1901). The essay was partially translated into English as “The Public and the Crowd” by Terry N. Clark, in *Gabriel Tarde: On Communication and Social Influence, Selected Papers*, ed. Terry N. Clark (Chicago and London: University of Chicago Press, 1969). See also Abe Walker, “‘What Can a Crowd Do?’ Revisiting Tarde after the Demise of the Public,” *Distinktion: Scandinavian Journal of Social Theory* 14, no. 2 (2013): 227–231.
- ⁶⁷ Félix Guattari, “Molecular Revolutions and Q&A,” in *Schizo-Culture: The Event*, ed. Sylvère Lotringer and David Morris (South Pasadena, CA: Semiotext(e), 2013), 187.
- ⁶⁸ Felix Guattari, “Notes on Power and Meaning,” in *Schizo-Culture: The Event*, ed. Sylvère Lotringer and David Morris (South Pasadena, CA: Semiotext(e), 2013), 182.
- ⁶⁹ Guattari, “Notes on Power and Meaning,” 192.
- ⁷⁰ Burroughs interview with George McFadden and Robert Mayoh, “Death Isn’t Necessarily Final” (1974), in *Burroughs Live*, 267.
- ⁷¹ Bernard Stiegler, *States of Shock: Stupidity and Knowledge in the Twenty-First Century*, trans. Daniel Ross (Malden, MA and Cambridge: Polity Press, 2015).
- ⁷² Tony D. Sampson, *The Assemblage Brain: Sense Making in Neuroculture* (Minneapolis and London: University of Minnesota Press, 2017), 76.
- ⁷³ Tony D. Sampson, “Digital Neuroland: An interview with Tony Sampson” (by Rizosfera) in Rizosfera’s *Rhizonomics (RZN)* 002, October 2017, https://monoskop.org/images/5/5e/Rizosfera_Neuropaesaggi_digitali_Intervista_a_Tony_D_Sampson.pdf.
- ⁷⁴ Guattari, “Notes on Power and Meaning,” 192.
- ⁷⁵ Gregory Bateson, “The Cybernetics of ‘Self’: A Theory of Alcoholism,” *Psychiatry* 34, no. 1 (1971): 1–18.
- ⁷⁶ See Nora Bateson’s film, *An Ecology of Mind* (2010).
- ⁷⁷ Bateson’s primary focus was alcohol addiction/alcoholism. See Bateson, “The Cybernetics of ‘Self.’”
- ⁷⁸ Claude Bernard, *Lectures on the Phenomena of Life Common to Animals and Plants*, trans. Hebbel E. Hoff, Roger Guillemin and Lucienne Guillemin (Springfield, IL: Thomas, 1974), 84 and 89.
- ⁷⁹ Bernard, *Lectures on the Phenomena of Life Common to Animals and Plants*; Claude Bernard, *Introduction to the Study of Experimental Medicine*, trans. H.C. Greene (New York: Collier, 1961/1865).
- ⁸⁰ Walter B. Cannon, *The Wisdom of the Body* (New York: W. W. Norton, 1932), 25.
- ⁸¹ David S. Goldstein, *Adrenaline and the Inner World: An Introduction to Scientific Integrative Medicine* (Baltimore: The Johns Hopkins University Press, 2006), 27. See also David W. Bates, “Unity, Plasticity, Catastrophe: Order and Pathology in the Cybernetic Era,” in *Catastrophes: A History and Theory of an Operative Concept*, ed. Nitzan Lebovic and Andreas Killen (Berlin and Boston: De Gruyter Oldenbourg, 2014), 32–54.
- ⁸² Burroughs, *Nova Express*, 28.
- ⁸³ William S. Burroughs, *The Electronic Revolution* (Berlin: Expanded Media Editions, 1970), 6.
- ⁸⁴ See Eric Mottram, *William Burroughs: The Algebra of Need* (Buffalo: Intrepid Press, 1971), 17. See also Eric Mottram, William Burroughs Conference at Naropa University, July 21, 1985, <http://archives.naropa.edu/digital/collection/p16621coll1/id/1719/>.
- ⁸⁵ Sadie Plant, *Writing on Drugs* (New York: Picador, 2001), 134.
- ⁸⁶ Obsolete Capitalism, *Control, Modulation and Algebra of Evil in Burroughs and Deleuze* (Rizosfera 2018), 18–19.
- ⁸⁷ Gilles Deleuze, “Postscript on the Societies of Control,” *October* 59 (Winter 1992): 6.
- ⁸⁸ William S. Burroughs, *Interzone*, ed. James Grauerholz (New York: Penguin Books, 1990).
- ⁸⁹ See Michel Foucault, “The Eye of Power,” in *Schizo-Culture: The Book* (South Pasadena: Semiotext(e), 2013), 10–19; Michel Foucault, *Power/Knowledge: Select Interviews and Other Writings, 1972–1977*, trans. Colin Gordon, Leo Marshall, John Mepham, Kate Soper (New York: Pantheon Books, 1980), 146–165.
- ⁹⁰ Timothy Leary, *The Intelligence Agents*, 3rd edition (Berkeley: RONIN Publishing, 2014/1979), 144.
- ⁹¹ Philippe Mikriammos in conversation with Burroughs (c. 1984), <https://www.dalkeyarchive.com/a-conversation-with-william-burroughs-by-philippe-mikriammos/>.

⁹² Roland Barthes, “The Death of the Author” (1967). Originally published (in English) in *Aspen* no. 5+6. Available at <http://www.ubu.com/aspen/aspen5and6/threeEssays.html>.

⁹³ Michel Foucault, “What is an Author?” (1969). In *Language, Counter-Memory, Practice: Selected Essays and Interviews by Michel Foucault*, trans. Donald Bouchard and Sherry Simon, ed. Donald Bouchard (Ithaca: Yale University Press, 1977), 113–138.

⁹⁴ In this essay, Barthes argues, the death of the “Author-God” marks the birth of literature: “writing is itself this special voice, consisting of several indiscernible voices. . . literature is precisely the invention of this voice, to which we cannot assign a specific origin: literature is that neuter, that composite, that oblique into which every subject escapes, the trap where *all identity is lost, beginning with the very identity of the body that writes.*” See Roland Barthes, “The Death of the Author,” trans. Richard Howard, *Aspen* 5+6 (Fall–Winter 1967), <https://www.ubu.com/aspen/aspen5and6/threeEssays.html#barthes>.

⁹⁵ Marvin Minsky, *The Society of Mind* (New York, London, Toronto, Sydney, Tokyo, Singapore: Touchstone, 1985). Minsky’s “society of mind” approach emphasizes the importance of understanding the mind as a collection of interconnected processes, rather than seeking a single, unified theory of intelligence.

⁹⁶ For example, and this would likely be foremost in Burroughs’ milieu of control monsters, in the late 1950s–1960s B.F. Skinner (and other prominent behaviorists) were contracted by the US government (as part of the National Defense Education Act) to develop teaching machines and programmed learning initiatives. A promotional video interview with Dr. Skinner (in 1960) opens with him describing what is essentially a pedagogical apparatus for shaping future inhabitants of a technologized world. While presented as a neutral tool for integrating traditional scholarship with different practices of learning: self-learning, remote learning, personalized learning, etc., it can also be analyzed for its more sinister use value. For example, consider the following imperatives of his programmed learning: (1) training students in pattern recognition and honing their predictive abilities; (2) naturalizing symbols as shorthand for written communication; (3) the integration of machines as mediators of personal experience and knowledge; (4) priming the student/user’s expectation of and desire for immediate feedback; (5) and relatedly, the normalization of constant and immediate interaction. Most interesting, although, by far exceeding the scope of this dissertation, are two separate but related things: (1) that the student’s interaction with the computer is mediated by a human teacher, i.e., the machine is a medium for “enhanced” human interaction; (2) the transformation of the experience of “learning” or “work” by its gamification. This has become a very common feature of AI; predictive technologies affect not only everyday-life HCI but everyday life itself. See *B.F. Skinner – Teaching Machines and Programmed Learning* (1960), film, Washington, DC: Division of Instructional Service of the National Education Association, <https://www.youtube.com/watch?v=CFYruzWeFwQ>.

⁹⁷ Roy Pennington, “Some Disparate Mentionables” (1973), <https://realitystudio.org/bibliographic-bunker/roy-pennington-on-mayfair-academy-series-more-or-less/some-disparate-mentionables/>. This text was first published as an appendix to William S. Burroughs, *Mayfair Academy Series More or Less* (Brighton: Urgency Press, 1973).

⁹⁸ Roland Barthes and Richard Howard, “Lecture in Inauguration of the Chair of Literary Semiology, Collège de France, January 7, 1977,” *October* 8 (Spring 1979): 3–16. For an audio recording of Barthes’ original lecture on power, see http://www.rhuthmos.eu/IMG/article_PDF/Roland-Barthes-Leon-inaugurale-au_a1346.pdf.

⁹⁹ Malabou, *Ontology of the Accident*, 3.

¹⁰⁰ Burroughs, *Naked Lunch*, 81. Moreover, in the Appendix, “Letter from a Master Addict to Dangerous Drugs,” Burroughs attributes opium and its derivatives with defining the limits of and describing addiction. He thinks the generalization of addiction to things such as candy, coffee, tobacco, etc. is a “misapplication,” and so applied, “the term loses any useful precision of meaning” (216).

¹⁰¹ Timothy Leary, *How to Operate Your Brain* (1994), <https://www.youtube.com/watch?v=19B26oDtsLg>. It’s a guided meditation set to music by Tool.

¹⁰² Jonathan S. Jones, “Opium Slavery: Civil War Veterans and Opiate Addiction,” *The Journal of the Civil War Era* 10, no. 2 (June 2020): 185–212. Also, forthcoming, Jonathan S. Jones, *A Mind Prostrate: Opiate Addiction in the Civil War’s Aftermath*.

¹⁰³ Patricia M. Tice, *Altered States: Alcohol and Other Drugs in America* (Rochester: The Strong Museum, 1992), 42.

¹⁰⁴ Plant, *Writing on Drugs*, 3.

¹⁰⁵ Olivia Harvey, “Marshall McLuhan on Technology, Subjectivity and ‘the Sex Organs of the Machine World,’” *Continuum: Journal of Media & Cultural Studies* 20, no. 3 (September 2006): 331.

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- ¹⁰⁶ Philipp Sarasin, “The Body as Medium: Nineteenth-Century European Hygiene Discourse,” trans. Brian Hanrahan, *Grey Room* 29 (Winter 2008): 51.
- ¹⁰⁷ Sarasin, “The Body as a Medium,” 54.
- ¹⁰⁸ Burdach was a German physiologist and neuroanatomist, very influenced by the ideas of Schelling, who worked to find a unifying theory of brain function and is responsible for coining the term “morphology” (independent of Goethe). Londe is credited with popularizing as “scientific the connection between malodorous human excrement and the poor (see Alain Corbin, *the Foul and the Fragrant: Odor and the French Social Imagination*). Halle was Chair of the Royal Academy of Medicine, newly set up after the Napoleonic Wars, where he promulgated the reform impulse of “social physics”—early social science’s attempts to reform the political operation of power and restructure social relations by scientific, and prescriptive, means. See Dorothy Porter (ed.), *Social Medicine and Medical Sociology in the Twentieth Century* (Rodopi: Amsterdam and Atlanta, GA, 1997).
- ¹⁰⁹ Georges Canguilhem, *The Normal and the Pathological*, intro. Michel Foucault, trans. Carolyn R. Fawcett and Robert S. Cohen (New York: Zone Books, 1991), 139 and 144. [Italics are my emphasis.]
- ¹¹⁰ Disciplinary power is understood as spatializing, observing, immobilizing.
- ¹¹¹ Burroughs, *Naked Lunch*, 18.
- ¹¹² All italicized phrases are directly quoted from Burroughs, *Naked Lunch*, 21–23.
- ¹¹³ Burroughs, *Naked Lunch*, 56.
- ¹¹⁴ Burroughs, *Naked Lunch*, 96–97 and 162.
- ¹¹⁵ For a first-person account, see: James S. Ketchum, *Chemical Warfare Secrets Almost Forgotten: A Personal Story of Medical Testing of Army Volunteers with Incapacitating Chemical Agents During the Cold War, 1955–1975* (Santa Rosa, CA: ChemBooks Inc., 2006).
- ¹¹⁶ See William S. Burroughs, *Naked Lunch* (New York: Grove Weidenfeld, 1990), 142.
- ¹¹⁷ Anne Collins, *In the Sleep Room: The Story of the CIA Brainwashing Experiments in Canada* (Toronto: Lester & Orpen Dennys, 1988), 2.
- ¹¹⁸ H.P. Albarelli, Jr., *A Terrible Mistake: The Murder of Frank Olson and the CIA’s Secret Cold War Experiments* (Waterville, OR: Trine Day, 2009), 382.
- ¹¹⁹ See “The Nervousness of Politics,” *Libcom.org*, April 14, 2014, <https://libcom.org/article/nervousness-politics>.
- ¹²⁰ Institute for Precarious Consciousness, “Anxiety, affective struggle, and precarity consciousness raising,” *Interface Journal* 6, no. 2 (November 2014): 271–300, http://www.interfacejournal.net/wordpress/wp-content/uploads/2015/01/Issue-6_2_IPC.pdf.
- ¹²¹ Burroughs, *Naked Lunch*, 18.
- ¹²² Foucault, *Discipline and Punish*, 11.
- ¹²³ Gilles Deleuze, “Having an Idea in Cinema [On the Cinema of Straub-Huillet],” Eleanor Kaufman and Kevin Jon Heller (eds.), *Deleuze and Guattari: New Mappings in Politics, Philosophy and Culture* (Minneapolis: University of Minnesota Press, 1998), 14–19.
- ¹²⁴ Mottram, *Algebra of Need*, 21.
- ¹²⁵ Burroughs, “Tactics of Deconditioning,” in *Burroughs Live*, 120–121.
- ¹²⁶ Mottram, *Algebra of Need*, 20.
- ¹²⁷ Allen Ginsberg, “In Search of Yage: Interview with Charles Ruas” (1975), *Burroughs Live 1960–1997: The Collected Interviews of William S. Burroughs*, 31.
- ¹²⁸ Burroughs, *Naked Lunch*, 18.
- ¹²⁹ Marshall McLuhan, “Notes on Burroughs,” *The Nation* 199, no. 21 (1964): 517–519.
- ¹³⁰ Karl Marx, *Capital*, Vol. 1 (1867), <https://www.marxists.org/archive/marx/works/1867-c1/ch10.htm#4a>.
- ¹³¹ Gilles Deleuze and Félix Guattari, *What is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell (New York: Columbia University Press, 1994), 108.
- ¹³² McLuhan, “Notes on Burroughs.”
- ¹³³ In a future version of this chapter, this constellation will include John C. Lilly’s contemporaneous theories on control and consciousness as well as his self-experiments with psychoactive drugs to develop methods for “programming and metaprogramming in the human biocomputer.” He might also be considered as one of the pioneers of “inner space.” The culmination of his work is expressed in his maxim: “In the province of the mind, what is believed to be true is true or becomes true, within limits to be found experientially and experimentally.”
- ¹³⁴ Timothy Leary with Robert Anton Wilson and George A. Koopman, *Neuropolitics: The Sociobiology of Human Metamorphosis* (Los Angeles, CA: A Starseed/Peace Press Publication, 1977), 49.

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- ¹³⁵ Leary, *Neuropolitics*, 51.
- ¹³⁶ Deborah Lupton, e.g., *The Quantified Self* (Cambridge and Malden, MA: Polity Press, 2016), but see also Mark Andrejevic, *Infoglut: How Too Much Information is Changing the Way We Think and Know* (New York and London: Routledge, 2013).
- ¹³⁷ Leary, *Neuropolitics*, 45.
- ¹³⁸ Timothy Leary, *The Intelligence Agents*, 3rd edition (Berkeley: RONIN Publishing, 2014/1979), 155.
- ¹³⁹ Timothy Leary with Robert Anton Wilson and George A. Koopman, *Neuropolitics: The Sociobiology of Human Metamorphosis* (Los Angeles: Starseed/Peace Press, 1977), 47–58.
- ¹⁴⁰ From text on back cover of *Semiotext(e)* 3, no. 2 (1978).
- ¹⁴¹ Obsolete Capitalism, “Control, Modulation and Algebra of Evil in Burroughs and Deleuze,” trans. Ettore Lancellotti and Letizia Rustichelli (2018), https://monoskop.org/images/2/20/Obsolete_Capitalism_-_Control%2C_Modulation_and_Algebra_of_Evil_in_Burroughs_and_Deleuze.pdf.
- ¹⁴² William S. Burroughs, qtd. by David Morris, “Schizo-Culture in Its Own Voice,” in *Schizo-Culture: The Event*, 205–206.
- ¹⁴³ Barbara Damrosch, unpublished article, 1975. Quoted in *Schizo-Culture: The Event*, 214.
- ¹⁴⁴ See Félix Guattari, *The Machinic Unconscious: Essays in Schizoanalysis*, trans. Taylor Adkins (Los Angeles, Semiotext(e): 2011/1979). See also Maurizio Lazzarato “‘Semiotic Pluralism’ and the New Government of Signs: Homage to Félix Guattari,” trans. Mary O’Neill, *Transversal* (June 2006), <https://transversal.at/transversal/0107/lazzarato/en>.
- ¹⁴⁵ J.G. Ballard, “Terminal Documents: Burroughs reviewed by Ballard,” *The Ambit* 27, London, 1966, https://www.jgballard.ca/non_fiction/jgb_reviews_burroughs.html. This was the same year Ballard’s book *The Atrocity Exhibition* was first published.
- ¹⁴⁶ J.G. Ballard, *Miracles of Life: Shanghai to Shepperton, An Autobiography* (London: Liveright, 2013), 207.
- ¹⁴⁷ In a 2015 interview, “Schizo-Culture” co-organizer and co-editor John Rajchman lays out just how ‘minor’ that encounter was: “[W]hen, many years later, Deleuze came himself to write about the new regime of information and the digital, he would adopt the term ‘control’ from William Burroughs, who himself had made a very amusing appearance along those lines at conference. Like all in singular moments, in short, one doesn’t really know what is in fact is going on until much later, when things have gone off in many directions and places, retrospectively changing one’s sense of what was taking place at the time.” See John Rajchman, “Interview with Dr. John Rajchman,” conducted by Taliesin Thomas, *IDSVA Newsletter* (Fall 2015), <https://www.idsva.edu/newsletter-fall-2015/2015/11/6/interview-with-dr-john-rajchman-idsva-newsletter-fall-2015>.
- ¹⁴⁸ William S. Burroughs, “Beat Godfather: Bowie Meets Burroughs,” in *Burroughs Live*, 236.
- ¹⁴⁹ Guattari, *Schizo-Culture: The Event*, 182.
- ¹⁵⁰ Guattari, *Schizo-Culture: The Event*, 189.
- ¹⁵¹ For an explicit example, see Eli C. Messinger, “Violence to the Brain,” in *Schizo-Culture: The Book*, 66–71.
- ¹⁵² Lotringer, *Schizo-Culture: The Event*, 33.
- ¹⁵³ Judith Clark, “Roundtable on Prisons and Psychiatry” [with R.D. Laing, Howie Harp, Judy Clark, and Michel Foucault], in *Schizo-Culture: The Event*, 174.
- ¹⁵⁴ Clark, “Roundtable on Prisons and Psychiatry,” in *Schizo-Culture: The Event*, 180.
- ¹⁵⁵ Eddie Griffin, “Breaking Men’s Minds: Behavior Control and Human Experimentation at the Federal Prison in Marion, Illinois,” *Journal of Prisoners on Prisons*, Vol. 4, No. 2 (1993): 2.
- ¹⁵⁶ Here I am riffing on Lotringer, who in the preface to *Schizo-Culture: The Event* describes “schizo-culture” as “a social laboratory meant to metastasize into society at large.” See Lotringer, in *Schizo-Culture: The Event*, 44.
- ¹⁵⁷ Clark, “Roundtable on Prisons and Psychiatry,” *Schizo-Culture: The Event*, 168–169.
- ¹⁵⁸ Burroughs, “The Limits of Control,” 41 and 38.
- ¹⁵⁹ William S. Burroughs, “William Burroughs Q&A,” *Schizo-Culture: The Event*, 162.
- ¹⁶⁰ Betty Kronsky, response letter (1975) quoted in *Schizo-Culture: The Event*, 205.
- ¹⁶¹ Burroughs and Gysin, *The Third Mind*.
- ¹⁶² This material consists of flyers for the event, Q&As, partial transcripts of talks that were frequently interrupted or abruptly ended, and workshop descriptions.
- ¹⁶³ According to Rajchman there were a small handful of academic publications and none before 2003 that referenced the conference. According to Lotringer, there were some obscure references in Semiotext(e) books and buried in the occasional footnote.

¹⁶⁴ See *Semiotext(e)* 3, no. 2 (1978).

¹⁶⁵ See “Semiotext(e) presents *The Return of Schizo-Culture*,” a live-performance curated event at MoMA PS 1, November 16, 2014, <https://www.moma.org/calendar/events/3396>.

¹⁶⁶ Lotringer, *Schizo-Culture: The Event*, 45.

¹⁶⁷ Lotringer, *Schizo-Culture: The Event*, 47.

¹⁶⁸ Burroughs, “The Limits of Control.”

¹⁶⁹ Burroughs, *Naked Lunch*, 196.

¹⁷⁰ Burroughs, *Naked Lunch*, 203.

¹⁷¹ Thrift, “Pass it On,” 18.

¹⁷² See Sergio Tonkonoff, *From Tarde to Deleuze and Foucault: The Infinitesimal Revolution* (Cham, Switzerland: Palgrave Macmillan, 2017).

¹⁷³ Colleen Eren, “Facebook Death,” February 27, 2018, <https://vitamfracta.com/2018/02/27/facebook-death/>.

¹⁷⁴ Nicholas Proferes, “The Many Mea Culpas of Mark Zuckerberg: The Facebook founder has this down to a formula,” <https://slate.com/technology/2018/03/mark-zuckerbergs-long-history-of-mea-culpas.html>.

¹⁷⁵ William S. Burroughs, “The Discipline of Do Easy,” (originally a poem/manifesto/short story in *Exterminator!* [p. 57]) by Burroughs, adapted by Gus Van Sant (dir.), “The Discipline of Do Easy,” 16mm short film collaboration (9 mins.), 1978, <https://www.youtube.com/watch?v=S4Aio-lrVo8>. See also: Allen Ginsberg, “William Burroughs’ Proclamation – (Do Easy),” The Allen Ginsberg Project, July 30, 2015, <https://allenginsberg.org/2015/07/william-burroughs-proclamation-do-easy/>; Bill Wahl, “The Discipline of Do Easy,” *The Humanistic Psychologist*, 41 (2013): 70–74; full transcript of Burroughs’ essay “Doing Easy” available at <https://mogadonia.tumblr.com/post/44274156/doing-easy-an-essay-by-william-s-burroughs>.

CONCLUSION: DISCIPLINE, CONTROL, AND THE PLASTIC SOCIALIZATION OF INCONTINENCE

Good heavens, gentlemen, what sort of free will is left when we come to tabulation and arithmetic, when it will all be a case of twice two make four? Twice two makes four without my will. As if free will meant that! . . . Twice two makes four seems to me simply a piece of insolence. Twice two makes four is a pert coxcomb who stands with arms akimbo barring your path and spitting. I admit that twice two makes four is an excellent thing, but if we are to give everything its due, twice two makes five is sometimes a very charming thing too. —Fyodor Dostoyevsky, *Notes from the Underground* (1864)¹

But I don't want comfort. I want God, I want poetry, I want real danger, I want freedom, I want goodness. I want sin. 'In fact,' said Mustapha Mond, 'you're claiming the right to be unhappy.' 'All right then,' said the Savage defiantly, 'I'm claiming the right to be unhappy.' —Aldous Huxley, *Brave New World* (1932)²

This dissertation engages plasticity as the throughline of mid-twentieth-century transdisciplinary investigations into shifts in communication and control that underlie contemporary publics. Plasticity means to change or adapt form but it can also mean to explode form. Plasticity—at least since William James discussed it in the context of habit in *The Principles of Psychology* (1890)—describes the neurological and behavioral changes in subjects upon exposure to certain experiences. As Elizabeth Grosz reminds us, more than a century after James: “Habit is the accommodation of life to its most insistent and repetitive forces and tasks, life’s transformation through its engagement with a world larger than its will or consciousness.”³ Plastic publics are a condition of a world that is technically manipulated in every conceivable way while at the same time global ecosystems spiral out of control. It is now well-established that “the automated machine of capital . . . has transformed the neuroplasticity of the brain by activating responses before the moment of consciousness kicks in.”⁴ [Now we know this plastic change involves neural circuitry, molecular profiles (brain metastases), neurochemistry, neuroendocrine and autonomic function.⁵] Disoriented, exhausted, anxious, insecure, ineffectual, numb to crises, people globally are currently faced with multiple urgent threats of extinction. The denial of the earth’s devastation by human impact is countervailed by neurocapitalism’s “unknown” or “alien” forces of

algorithmic automation and generative AI that build upon classic disciplinary technologies and exchange the hyper-determination of earlier forms for “relationships without qualities”—mediums for fundamentally impersonal exchanges and neuronal automatisms—that alter the psychocultural and historical bodies-brains-semiotics-technics assemblage of contemporary social life, or what I call “plastic publics,” with the ability to be formed and give form while surviving.

As this dissertation argues, while the concept of plasticity has been widely studied and applied in research fields as diverse as behavioral economics, biology, psychology and neuroscience, art and architecture, its direct relationship with the formation of publics—despite ecosophical and newer “activist neuroaesthetic” currents in critical cultural theory, deep media ecologies, theories of entanglement, or systems-oriented theories of brain-body-environment interrelation and intra-action—is not yet a well-established area of research.

In nine chapters and an orchestrated “pause” or caesura, this dissertation introduces the concept of plastic publics and its relation to a particular expanded control diagram. Gilles Deleuze cautions in his 1987 lecture (“What is the Creative Act?”), what is so different about societies of control is that unlike the confinement of people reminiscent of disciplinary societies, the new degrees of individuated connectivity afforded by information technologies—at the time, he was speaking specifically of Minitel, the state-run computer service in France that predates the world wide web by more than a decade—whereby “unrestricted traffic” on networks to “electronic meeting places” is born from a merger of state intervention and market-neutrality.⁶ It is just like a highway where people can travel infinitely and “freely” while being perfectly controlled and steered at calculated speeds, guided—seemingly without the intervention of human consciousness or language—by order-words on road signs or navigation apps and GPS devices towards a destination. “That is our future,” gestures Deleuze.⁷

Burroughs’ pioneering explorations of control and becoming, this dissertation approaches contemporary forms of power as “visceral politics,”⁸ how this informs what Tiziana Terranova describes as the “ordinary psychopathologies of cognitive capitalism,”⁹ and further to that, what I refer to as the composing and decomposing of “plastic publics.” It looks at how cybernetic communication and information systems produce mutations in human collective consciousness and reconfigure human behavior in increasingly technical yet also visceral and intimate ways. It

anticipates the mutations of surveillance capitalism, whereby those who owned the means of production are adapted into those who “control the means of prediction.”¹⁰ For example, with behavioral big data (BBD)—anticipating, predicting, profiling, individuating, dividuating, and so forth; with algorithmic behavioral modification technologies (BMOD) for mass manipulation; massive-scale emotional contagions for social dis-integration; addiction by design guiding the development of digital products and services; psychic steering users with targeted advertisements,¹¹ etc.



Figure 9.1. Early and later forms of persuasive advertising and expectations of what qualifies as emotional “relief” from the stresses of everyday life.

From a deep dive into the control diagram conceptualized by Deleuze by way of William S. Burroughs’ pioneering explorations of control and becoming, this dissertation approaches contemporary forms of power as “visceral politics,”¹² how this informs what Tiziana Terranova describes as the “ordinary psychopathologies of cognitive capitalism,”¹³ and further to that, what I refer to as the composing and decomposing of “plastic publics.” It looks at how cybernetic communication and information systems produce mutations in human collective consciousness and reconfigure human behavior in increasingly technical yet also visceral and intimate ways. It anticipates the mutations of surveillance capitalism, whereby those who owned the means of production are adapted into those who “control the means of prediction.”¹⁴ For example, with behavioral big data (BBD)—anticipating, predicting, profiling, individuating, dividuating, and so forth; with algorithmic behavioral modification technologies (BMOD) for mass manipulation;

massive-scale emotional contagions for social dis-integration; addiction by design guiding the development of digital products and services; psychic steering users with targeted advertisements,¹⁵ etc.

Chapter 1 introduces the concept of “plastic publics” and its philosophical-empirical foundation, goals, and intersections: for example, it brings the work of Catherine Malabou into dialogue with Tony D. Sampson, and William S. Burroughs into dialogue with Aldous Huxley and theorists of the Foucault-Deleuze and Guattari “expanded control diagram.” This dissertation pays attention to neuroplasticity, the brain’s ability to adapt and change form in response to experience, learning, environmental stimuli and considers what are the political and ethical implications of (and possibilities for) this.

In Chapter 2, “On Publics,” the context for plastic publics and the shaping of publics through feedback forms is provided by examining Søren Kierkegaard’s insights on the social production of publics. Additionally, the chapter explores Gabriel Tarde’s concept of social contagion and Jürgen Habermas’ conceptualization of the public sphere to pursue a plastic concept for not only the shaping of public opinion, but of publics themselves through the technosocial composition of a cognitive nonconscious between humans, machines, and the environment.

Chapter 3 serves as the dissertation’s methods chapter, focusing on several different contexts “transdisciplinarity” has been developed within and why it is adopted as a methodological framework for plastic publics. The chapter links transdisciplinarity with post-qualitative inquiry as a methodological jump off for the theoretical project of elaborating entanglements of plasticity and power this dissertation engages.

The Caesura is intentionally positioned after the methods chapter, as an extension of the dissertation’s methodology. It is an optional exercise in “deep engagement”—a critical listening practice that asks the reader to pay attention so deeply that they sense the pulsating rhythms of their own brainwaves. This exercise offers Alvin Lucier’s “I Am Sitting in a Room” as a thinking-with piece. The development of deep attention skills, both environmental and embodied, can help to better discern and resist pervasive forms of inattention used to govern (steer the energies) of neurocapitalism—e.g., the repetition of behavioral patterns or units of information; the privatization and impermeability of social systems; hyperconnectivity, and “the connective speed

of algorithmic interactions”¹⁶ that monitor, control, transform users into data chattel; and the “info-neural stimulation that has grown too fast for conscious elaboration—and for emotional elaboration, too.”¹⁷ We all feel to some degree the loss of control, and chaos, that simultaneously grows along with the ubiquity of artificial intelligence, automated controlling devices that operate faster than humans can consciously process, pervasive interaction with learning “machines we do not understand” (recalling Norbert Wiener), and some self-awareness of the cultural-neuroplastic entanglements and mutations of an extended, connected brain. Pressures mount as our current anticipative systems of interaction make social worlds oscillate between “chaos and the automaton”—which is how Franco Berardi succinctly describes life captured and subjected to automation. In his recent works linking chaos and control, Berardi has declared that “the neuroplastic chaosmosis” is underway. He identifies the problem of how can we produce subjectivity independent from the corrupting effects of capitalism (its darkness, damages, devastations, and pathologies) while still interacting with and within this context, under the current conditions of “compulsive acceleration.”¹⁸ In recent works addressing the “neuroplastic dilemma,” Bifo has identified a need for a therapeutic slowing and rhythm-seeking function: such as for the neuroaesthetic harmonization of the rhythm of breath. So, this dissertation’s exercise proposes—in the spirit of Bifo and Burroughs’ trauma-informed, experimental methods for transforming the “reactive mind”—that what is needed are tools for inventing new modes of sensibility and new interventionist methods for transforming the global interconnection of our neuroplastic potential at the level of neurogenesis—steering it away from its current implementation: persuasive technologies creating and manipulating highly engaged users (addicts), habituated to “algorithmic BMOD”¹⁹ (algorithmic behavior modification), in the systematic collection, algorithmic processing, circulation, and monetization of user data that provides for the smooth feedback operations of global marketplaces and computable psychosocial systems.

Chapter 4, “Expanded Control Diagram,” introduces the genealogy of control societies that emerged from the combined theorization of Foucault, Deleuze-Guattari, Burroughs, and expanded into forms of neuropower, an advanced form of biopower. It lays the foundation for the extended control diagram that will be elaborated upon, in several manifestations of “learning machines,” in subsequent chapters (5–8).

Chapter 5, “Rereading Foucault: Control is Learning/Learning is Control,” delves into Foucault’s model for the disciplinary shaping of docile bodies in *Discipline and Punish*, particularly focusing on Joseph Lancaster’s “mutual improvement school.” This chapter explores the operation of an anxiously omniscient, proto-cybernetic learning and teaching machine, using the example of the monitorial system’s networking of bodies, techniques, environmental conditions, architectures, and surveillance infrastructures for conditioning the behaviors and socialized habits of groups. For example, the anticipation of punishment produces docile subjects, who are embedded in complex networked systems that are both adaptive and recursive, and their affective feedback (anxiety) is constituent of (stress-induced) nonconscious social organization and its applied use, as a learning machine. Re-examining Foucault’s disciplinary control through the lens of learning and feedback is critical to understanding contemporary control with its twinned neuroscientific and AI-driven engines.

Chapter 6, “A Classical Behaviorist Twist to Social Control,” examines the influential role of classical behaviorism—which again focused on learning/unlearning habits—in the control diagram. The basic assumption of classical behaviorism was that the human mind is shaped by environmental conditioning throughout life. This chapter discusses how classical behaviorism shifted plastic potential from the public realm of education to the private world of corporations, public relations, and marketing, aiming to harness group behaviors to grow capital by conditioning consumers and reshaping them into markets whose behaviors are monitored, controlled, and transformed by industry. The modern scientific control project of behaviorism emphasizes plastic potential, suggesting that rather than fixed subjects, human behavior is inscriptive and highly malleable based on its core theory that all behaviors are acquired through learning/conditioning processes. Behaviorism in turn is foundational to and embedded in contemporary information societies’ “interaction” (according to behaviorism, all behaviors are learned through interaction with the environment), predictive technologies and “anticipative experience patterning,” thereby rewiring the networks of relations to export the statist incubated forms of control to the private sector of corporations. Although this chapter does not extend into the present, it is worth noting in this conclusion that contemporary forms of technologized social control build upon the behaviorists’ development and promotion of techniques for motivation, learning, and conditioning

habits. Everything from “engineered consent” (Edward Bernays, 1947 and 1955) to “manufactured uncertainties” (Ulrich Beck), and from behavioral economics and digital nudges to fully automated decision-guidance and decision-making, persuasive technologies for “operationalizing behavior change,” to BBD, to algorithmic BMOD, to AI. It is now incredibly easy to compute and even create the perfect consumers for the market and to anticipate or design future markets based on [increasingly faulty (Aristotle) or “alien” (Luciana Parisi) perceptions of] these habits and their publics and that are products of capital’s tapping into and manipulation of plastic potentiality.

Chapter 7, “Cybernetics: From Guidance Systems to Psychiatry, Setting the Foundation for Controlling Modern Publics,” investigates mid-twentieth-century advancements in communication and control through the lens of cybernetics. The chapter explores how behaviorist principles merged with developments in experimental psychology and neuroscience, augmented by cybernetic technologies and computational networks, to shape and automate the biopolitical management of life. Cybernetics are feedback-oriented learning systems, the original purpose was to automate war machines, and presaging AI, they also proved useful for automating social control and building modes of self-equilibration in nervous networks necessary for everyday technological interactions. This dissertation explores how cybernetics reframes the discussion of control away from individual subjects to interactions between oscillating subject and objects, and from external forms of social control to increasingly neuropsychiatric methods including experimental methods for self-ungovernability, or more to the point, the creation of incontinent subjects. Donald Ewen Cameron’s “Montreal experiments” at Allan Memorial Institute were funded by US government intelligence agencies as part of Project MK ULTRA. Work that was initially professed to treat schizophrenia and “contribute to the ongoing [deinstitutionalization] revolution in psychiatric hospitalization”—to make a more profitable, more efficient psychiatric marketplace for postwar publics dealing with “war neuroses” and “adjustment problems”—were performed without consent on psychiatric patients, prisoners, women with postpartum depression, etc. Experimental subjects were submitted to “psychic driving” (behavioristic depatterning and repatterning of the brain), experiments with psychoactive drugs, or extreme interventions (ECT, sensory deprivation, Thorazine-induced coma) to experimentally address the many new “problems of feedback” in the operations of already extremely traumatized postwar social life, including unknown quantities—

such as threats of new enemies with new weapons and new forms of spectacular culture putting new demands on and creating models for new psychopathological regimes in the intimate spheres of desire, emotion, and fear.

Chapter 8, “Soft Machines with Plastic Potential: William S. Burroughs and the Control Diagram,” examines Burroughs’ critique of language, automation, state-controlled disinformation, capitalism, and all forms of mind-control systems. This chapter highlights Burroughs’ influence on control theory (both within the genealogy of biopolitics and the generative destabilization, disorder, decomposition of populations it inspired), its resonance in Deleuze’s conceptualization of control (“controls are a *modulation*, like a self-deforming cast that will continually change from one moment to the other, or like a sieve whose mesh will transmute from point to point”²⁰), and in post-Deleuzian theories on what comes after societies of control and what tools do we need as we become endocolonized by alien computational forms?²¹ Today’s algorithmic behavior modification by digital platforms have given rise to a new apparatus combining behavioral big data (BBD are large, rich datasets on human social behaviors, actions, and interactions generated by our use of the Internet, social media platforms, mobile apps, IoT consumer devices, etc.) and computational sovereignty. As Benjamin Bratton observed in 2015, “governance evolves in relation to what is technically possible for it” and as such, at present an “alien subject” is being configured by the automated architecture of a computational sovereignty.²² Big data and associated new analytic tools foster more effective, less transparent, automated persuasive technologies for the “engineering of consent” (Bernays)—from deep and individualized profiling and modeling; the opacities of surveillance, data collection, algorithmic management, and interaction with AI-based systems; information asymmetries that mutate spheres of influence and drives, learning and motivation. It is just as Burroughs warned in *Naked Lunch* (1959), written in the same decade the Palo Alto Group conducted cybernetic-behaviorist research on military veterans diagnosed with schizophrenia, and Cameron conducted his MK ULTRA-funded neuropsychiatric research: “The logical extension of encephalographic research is biocontrol: that is control of physical movement, mental processes, emotional reactions, and apparent sensory impressions by means of bioelectric signals injected into the nervous system of the subject.”²³ These automatisms produce the behavioral surplus through which our future needs are scripted. This anticipation of neural forms

of social control—and of neural modulation as a form of governance—is how Burroughs fits into the bigger picture around reorientation of the control diagram around learning/feedback, the move of these incubated forms from state to corporate regimes, and how they play out in the use of neuroscience and AI to expand the mesh of control. Burroughs prefigures what Tony D. Sampson refers to as “neural culture, [or] neuroscientific-inspired managerial interventions and business thinking related to labor and consumption.”²⁴ It is a trend that began in Fordism and has culminated in ways to “intervene upon the neuron and the brain: to put them to work.” As Ana Teixeira Pinto notes, this is a problem of feedback forms in general: “We are increasingly unable to distinguish between our phenomenological existence and the economic pressures which determine it. Paradoxically, . . . [o]ur surplus information seems to obscure instead of shedding light on our situation.”²⁵

This brings us to Chapter 9—this chapter—the dissertation’s conclusion, where I flesh out the connections plastically exploded by the expanded control diagram to illustrate how relevant and practical these concepts are for emerging publics and to engage some of the critical theorists working with an expanded concept of plasticity. Most importantly, I will flip control, which is usually thought of in terms of restraint, repression, order—in a word, or rather in Foucault’s word, “discipline”—on its head. Instead of discipline—what Aristotle would have called “continence”—being the dominant form of control, we are increasingly seeing the unleashing and marshalling of incontinence as the next wave of control, one animated by an orchestrated desire to overwhelm and destroy rather than to build and maintain order.

Learning Machines/Earning Machines

This dissertation considers some historical examples of how control operates through entangled technological systems, symbolic and material regimes, and social intra-actions that shape and explode or mutate “individual” habits, decisions, and perceptions into social terraforms. More than fifty years before cognitive capitalism and semiocapitalism became defined by the hyperconnected conditions of contemporary capitalism (the labor performed by us and on us with the need to work to live in “cognitive capitalism” but also with the financialization of social life through big data and platform logics that pressure users to always verify, check in, optimize, update, and curate),

Burroughs was preoccupied with the pathological “breaking down” of human subjects into hyperaroused—overloaded, overcoded—thinking machines that are operational parts of global informational systems of communication and control. Automation has provided vastly optimized substitutes for human labor and cognition at the same time it reconfigures human subjectivity (or what Luciana Parisi refers to as the “socio-affective qualities of the user”) into data and computational forms. The contemporary technological subject, Parisi argues, “is neither solely an enslaved component of machines nor its deluded interactive user. Instead the subject is being reconfigured from the standpoint of a learning machine.”²⁶ In particular, this learning machine is constituted by the multitude of forms of predictive patterning that “define modes of thought that are neither given nor constructed, neither internally self-posed nor derived from external use.”²⁷ Predictive technologies track online activity, gather information, triangulate the information with other users’ data, and process enormous amounts of data to compose users into “interest categories” and “ad groups.” Cumulatively, we are currently being surveilled and steered by technological organs that we don’t fully understand and that don’t fully understand human inputs.

Control is always social, linked to human interaction and connected through various systems. New plastic forms of control are not just about directing, but also shaping, creating, and destroying. Plastic forms of power are generative and destructive. The dissertation puts forth several arguments: (1) control is always present in social contexts, (2) control is not restricted to a particular political system or ideology but pervades all aspects of social life—in particular as “microfascisms,” (3) control and learning are closely intertwined, and (4) new technologies have enabled an unprecedented level of control, reminiscent of the “dark side” of the global village concept by McLuhan. The rise of consumer capitalism and the denoetization trend, driven by mass consumption, have played a significant role in this development. Under the conditions of neurocapitalism, contemporary publics are administered through affective, contagious, and visceral flows of information at nonconscious levels of engagement. Digital networked technologies have not only changed the flow of information and communication patterns but have also transformed the structure and composition of publics at the level of neurons. Individuals are no longer just subjects or projects but constantly modulating neurocapitalism’s latest forms and conditions for survival.

This dissertation argues that plasticity is what we study after affect. Cybernetic noise and atomic confusion, feedback loops of “depatterning” and “psychic driving,” are discussed in this dissertation as mind control techniques that have been employed upon publics and optimized for decades. With new forms of algorithmic governance, incontinence is harnessed through such seemingly benign/soft techniques as “mindless scrolling” coupled with information glut, harnessing inattention and distraction. Another soft technique is “doom scrolling,” harnessing anxiety. We can see this play out in the harnessing of incontinence through “rage farming,” which readies the body for war. The greater the control, the greater the incontinence. The constant stream of information required of feedback forms is too fast, too much to process, and ultimately destabilizing, or to use the favorite buzzword of aspiring tech overlords everywhere, “disruptive.” It is increasingly difficult to discern between our phenomenological experience of the world and the economic forces and pressures that determine it. Transformative technologies are seemingly steered away from benefitting life and toward large-scale risks (e.g., climate change, nuclear weapons, AI, biotechnology), affecting the future of all life. This dissertation has argued that control is generally still conceptualized as disciplinary, in other words continence, and what we are seeing now is the generation and weaponization of incontinence.

Plastic Publics: Incontinent Pasts and Futures

In *The Republic*, Plato discusses the “tyrannical personality,” where he compares people to political regimes.²⁸ His tyrannical person is never at peace, always wanting more, perpetually paranoid. But Plato believed no one does wrong willingly. This kind of behavior is caused by misapprehension or ignorance of the good, or really a misapprehension of what is good for us. The tyrannical person believes that the unrestrained quest for fulfillment of desire will make them happy. They are wrong and do wrong through ignorance. If the tyrannical personality could be led to understand where true happiness lies it would autocorrect into a more harmonious life.

Aristotle takes Plato’s tyrannical personality and adds elements of (lack of) self-awareness, self-discipline, and self-reinforcement to arrive at what is generally translated as the “incontinent person.” Aristotle used the Greek word *akrasia* to describe what we typically understand to be

“lack of self-control” or “refusal of self-mastery,” but is more literally translated as acting against one’s better judgment.²⁹

In *Nichomachean Ethics*, Aristotle discusses the incontinent person as marked by uncontrollable appetites and self-destructive behavior. At the same time, there’s a frustrated desire for continence or self-restraint. The incontinent person is not wrong, as Plato thought, but *weak*.³⁰ At the beginning of Western thought, the will is conceived in failure. Recast in terms of cybernetics, Plato and Aristotle are debating the failure of control in terms of feedback loops. Plato imagines a singular feedback mechanism relaying incorrect information, which the tyrannical person processes and bases their actions on. The problem is the information. Aristotle imagines multiple feedback loops in which the intensity of one (pleasure) overwhelms the other (rational desires). For Aristotle, it is the presence of multiple competing feedback mechanisms and *the processing* of the information these mechanisms provide that is the cause of incontinence.

Contemporary programs of control reveal they are both right. The feedback received via our various social media lives triggers the brain’s dopamine reward system. At the same time, we are seeing that to an increasingly distressing degree, the information publics are receiving via the social media reward loop is not just wrong, but wrong in a way that feeds and activates the “tyrannical personality” in Plato’s terms or the “incontinent person” in Aristotle’s.

The problem of feedback is compounded by contemporary technologies based on maximizing the ungovernability of rapid, repetitive, dopamine-driven feedback loops. While feedback can, as the early cyberneticists imagine, perfect control, what we have been seeing in the last four decades or more with ubiquitous technical governance is the unwinding of self-control and the rewarding of incontinence as a mechanism of social control. At the same time these digital tools create a virtual unity of self via feedback by their performativity and self-observation capacities, they render subject into digital addicts with uncontrollable user/consumer behaviors.

With incontinence, control means to “trigger the reward system” or to elevate levels of the neurochemical dopamine that shapes reinforcement learning and drives voluntary, high-frequency engagement. For one example, Nir Eyal’s “Hooked Model” provides a how-to guide for building the perfect neurocapitalist apparatus of habit-forming technology products and services, manufacturing desire and engineering behavior by guiding consumers/users through a series of

experiences designed to create habits, and—by scrolling and scrolling in search of microdoses of dopamine—addicts.



Figure 9.2. The infinite loop of Nir Eyal’s “Hooked Model.”

There are an estimated 5.19 billion people around the world using the Internet and 4.9 billion social media users globally in 2023. Digital platforms are constantly innovating and optimizing ways to exploit consumer attention and behavior, transforming users’ solitary, continuous, rapid-feedback time on devices into addictions or faulty feedback mechanisms. Indeed, some computer scientists have argued that “the nature of the feedback commonly used by learning agents to update their models and subsequent decisions could steer the behaviour of human users away from what benefits them, and in a direction that can undermine autonomy and cause further disparity between actions and goals as exemplified by addictive and compulsive behaviour.”³¹ Social media platforms such as Facebook, Instagram, Twitter, YouTube, TikTok, Pinterest, Reddit, Discord, and most other social media leverage the ubiquity of user interaction with “learning agents” or “intelligent software agents” (ISAs) that mediate experience and steer the neural circuitry that underlies learning and addiction. With repeated use and over time, and with the repeated release of dopamine, social media and technology addictions can in turn lead to neuroplastic changes that compromise our ability to focus, prioritize, and set goals; self-regulate our mood and emotions; and relate to others. Social media is known to copy gambling methods to create psychological cravings and keep users online via the neosomnambulist pull of what Natasha

Schüll, author of *Addiction by Design*, refers to as “the machine zone”—which consists of “solitary, absorptive activity [that] can suspend time, space, monetary value, social roles, and sometimes even one’s very sense of existence.”³²



Figure 9.3. Still from 1956 film version of George Orwell’s *1984*.

What first appeared in Plato’s *The Republic* as an auto-tyrannical entity is now a new episteme and regime of governance that is beyond control as we have always known it; it is control by an inability to make sense and is becoming an epidemic of incontinence. Anna Munster refers to the invasion of incontinence tech in deeply visceral terms in her essay “Distended Nervous System: Networked Media and its Neurological Turns,” where she describes how big tech seeks to “insert themselves at a molecular level in the temporal intervals between what is felt at a lived relational level and what we know or how we will then act, harnessing attention to prediction so that we inhabit an environment where ‘they’ feel what we are going to do before we feel or know it.”³³ What we are seeing with the sudden surge in the use of generative AI (e.g., OpenAI’s ChatGPT) are newer forms of *reflexive control*³⁴ being administered via interactions with *incontinence technologies*. Reflexive control is a term generally used to confer Russian military strategy and Cold War-era statecraft that continues to the present by always adapting new techniques to target, stir, and drive individuals, but more importantly, to mobilize and steer groups:

with computational propaganda, viral disinformation campaigns, “fake news” and the mainstreaming of conspiracy theories, trolling and automated social media accounts (bots), psy-ops, etc. It is defined as “a means of conveying to a partner or opponent specially prepared information to incline him to voluntarily make the predetermined decision,”³⁵ but more broadly covers soft powers such as perception management and cognition jamming. Recall Norbert Wiener’s refrain on the cybernetic condition—you cannot understand your machines—and consider how, with the application of reflexive control,³⁶ this guiding principle mutates into “Ignorance is strength!”

This troubling mutation coincides with the emergence of “digital fascism,” with its marshalling of “digital soldiers” radicalized through access and addiction to revulsion, anger, hate, and paranoia consumed and performed through mostly online interactions within social media networks. Fascist sympathies and behaviors have always been a part of the American cultural-political landscape, but not at the scale and intensity provided by social networks’ magnitude and amplification, or Big Tech’s questionable role in the management of viral misinformation and consequences of the rapid, continuous circulation, and governance of feedback afforded by social media platforms, their massive audiences, and algorithms. For example, it has been argued the January 6, 2021 ‘attempted coup’ was the direct result of Donald Trump summoning his publics to the US Capitol for a “rally” and a “march on the Capitol” via a series of late-December tweets. Far-right groups on social media then used a variety of platforms to gather information, target audiences, and virally spread the message, coordinate, and carry out the attack online and offline while livestreaming it to a global audience³⁷:

January 6th was the moment when the virtual fascism of violent ideas, surging anger, and fierce talk on online and social media platforms became violence actualized in the world we all share with an unprecedented scale and intensity. January 6th wasn’t the birth date of digital fascism, but it was the day on which the rest of world discovered that it could no longer be ignored.³⁸

The shift toward fascism is not a bug but a feature of social media, which have become central to our lives not by being useful, but by being addictive, which by necessity requires destabilizing, overwhelming, and dis-integrating self-control. In other words, control is extended by actively

creating incontinent, or to use Plato's more disturbing articulation, "tyrannical" publics—ones governed by overpowering urges and appetites, always hungry and always afraid. By design, these technologies game our already faulty feedback mechanisms toward extreme incontinence. As *The Atlantic's* executive editor, Adrienne LaFrance, cautions in her likening of Facebook to the legendary Doomsday machine—the fully automated, megadeath destruction of Earth: "Today's social networks, Facebook chief among them, were built to encourage the things that make them so harmful. It is in their very architecture."³⁹

Affect Engineering Plastic Publics

According to McLuhan's mediumistic hypothesis—it is the medium and not content that is largely responsible for reconfiguring and reshaping our social and political institutions. The Plato/Aristotle divide discussed above make it clear it is both. The medium is the message is basically Aristotelian, but the message is also the message is Plato. To put it another way, it matters that we are receiving the message, but it also matters what is the content of the message. The inseparability of *how* media transmit from *what* they transmit is a feature, not a bug, according to McLuhan, who writes in *Understanding Media*:

Today when we want to get our bearings in our own culture, and have need to stand aside from the bias and pressure exerted by any technical form of human expression, we have only to visit a society where that particular form has not yet been felt, or a historical period in which it was unknown.⁴⁰

According to McLuhan's formal causality: every code is a channel, and every channel is a code. McLuhan, like Burroughs, enlivens close psycho-socio-historical observations of the associations and patterns of interaction and organization that communication technologies and "electronic media" have altered, mutated, and extended the range of with 'biases and pressures.' Moreover, "the medium is the message" anticipates a relational ontology that arises with postwar systems theory, cybernetics, and automation where relationships take on characteristics of inorganic technical dynamics, forms, behaviors, patterns, associations, and etc. that shape and steer always connected, networked, dynamically interactive, sensible-intelligible enough to be governable plastic publics.

In 2004, Tiziana Terranova referred to the intimate working over of the user/consumer as “the field of operation of a new mode of cybernetic control” that stretches from Lewis Mumford’s utopian call for a ‘return to the organic’ in technological innovation, through the mid-twentieth-century cybernetic turn, to recent developments in the field of biologic computation. Terranova describes the scene for “the emergence of an *abstract machine of soft control*—a diagram of power that takes as its operational field the productive capacities of the hyperconnected many.”⁴¹ Unlike addicts, who as Burroughs said, act upon themselves through neurochemical substances with a goal of not just regulating but steering their own affective states, the designers, marketers, and managers of today’s persuasive technologies are in a position to act upon global audiences of users at a distance, delegating to technology the task of soliciting and sustaining specific kinds of human behavior that inhibit or preclude certain user actions while inviting or demanding others. As Tarde foresaw with the dynamic microrelations of publics created by the circulation of newspapers, “imitative processes can be consciously and carefully steered” by “aiding and abetting certain aspects of continual transformation, strategically bending processes so that it ‘ripens’ in certain directions rather than others.”⁴²

An “abstract machine of soft control” proliferates by neuromodulation, ‘ripening’ or priming intelligent agents for the newer modes of predictive control, include the steering of beliefs and behaviors from a distance, from unknown sources, and the naturalization of highly mediated ways to sense presence online—including a tactile sense of community—training users with bursts of dopamine via quick-ping addictive feedback. In 2007, journalist Clive Thompson discussed this in terms of “social proprioception” afforded by social media use—an augmented capacity to sense the presence of those in your community while at the same time informing, or reinforcing, where you are in dynamic technosocial space and providing navigation.⁴³ At the same time, as Christopher Till argues with regards to the reflexivity of online propaganda practices, users are mobilized to varying degrees of awareness; users and audiences can be used “(many unwittingly) . . . as generators of data for profiling and targeting”—as were Dr. Cameron’s patients—to test the system of reality construction, with interventions “focused on the destabilisation of perceptions of reality and [to] recruit users in the construction of new politically useful realities.”⁴⁴

For instance, Trump used Twitter especially—and social media in general—to create an alternate reality for his followers that did not rely on empirical evidence but on the regulation of

incontinence. These followers had long been trained toward unreality through their social media lives and destabilized toward the paranoia and fear that are the marks of the Platonic conception of incontinence. When the former US president was deplatformed by Twitter and Facebook following the January 6, 2020 attempted coup of the Biden White House, he started his own platform to maintain engagement with his online audience—“TRUTH Social”—and to grow the Trump brand into products and services for incontinence: from MAGA merchandising to the Trump Media & Technology Group (TMTG), which is behind the new social media platform. Trump’s despotic influence has been compared to the “mind-control” or brainwashing of a messianic cult—like L Ron Hubbard’s Scientology—by appealing to followers’ emotional lives and “reactive minds,” exploiting their entanglements with and resentments of social programming for behavioral control with informational control and the powerful amplification of algorithms. With Trump, incontinence became a virtue; in fact, it became the only virtue for his followers.

Trump’s tyrannical influence and cult-leaderlike domination of the constitutive imagination of his public is an ongoing production of affect engineering and plastic power. Specifically, by exploiting and seducing—first on television, then even more immersively with popular social media platforms like Twitter and Facebook—his audience sustains his domination with immediate, amplified, and aggressively virulent feedback. Trump’s egomania, maximal facial and hand movements, exaggerated rhetoric and attire—including his sculpted and gilded coif, hunkering frame, vigorous self-tanning, and heavy stage makeup—seduce and agitate, decomposing self-governance of attention and continence (distractions, causing breakdowns). The message is irrelevant as long as it seduces or agitates. This feedback loosens and ultimately breaks all the ligatures of self-control that feedback creates. To Trump’s followers, this breaking of the bonds of self-control, this total incontinence, feels like freedom.

The success of Trump is also largely due to his rapid, continuous connections with the American public of the early twenty-first century at a certain level of narrative, frequency, and code—by sending direct signals to and creating a platform for the most inchoate feelings of insecurity, marginalization, disenfranchisement, disempowerment, and uncertainty to accumulate pressure and find relief. While Trump provides the bile-fueled face, the trigger and the match, the hard work of incontinence has already been done by smartphones and social media built on saying “yes” and “yes” and “yes” to impulse after impulse—at high speed. As Paul Virilio presciently

wrote in *A Landscape of Events*—a book originally published in, and reflecting upon, 1990s-era digital culture—the solitary, continuous, rapid “time on device” operates in time that is not here, not now, but “in an other time over which no one has any power, despite the tragic illusions of computer technology.”⁴⁵ McLuhan foreshadowed this too, in his well-known *Playboy* interview, but with a much brighter—one might say, proto-Accelerationist—outlook:

Automation and cybernation can play an essential role in smoothing the transition to a new society. . . . The computer can be used to direct a network of global thermostats to pattern life in ways that will optimize human awareness. . . . [I]f you understood cybernetics you’d realize we could do it today. The computer could program the media to determine the given messages a people should hear in terms of their over-all needs, creating a total media experience absorbed and patterned by all the senses.⁴⁶

What happens when humans have been rendered incontinent by the very feedback systems that are supposed to render them manageable parts in a system? A system cannot be a system if the parts are uncontrollable.

Continenence Technologies and Self-Colonization

As vast flows of incontinence have been released, addiction management and techniques for self-regulation have formed a new market for continence technologies, including fitness trackers, activity monitors, smart home seamless integration tools, productivity apps, etc., responding to a desire for self-continenence amongst the managerial and professional classes. New networked forms of surveillance and algorithmic governance—of even bodily functions, like toilet habits, are part of the “nonconscious background noise” of everyday life.⁴⁷ New technologies—such as brain-computer interfaces linked to the Internet, virtual reality and augmented reality wearables, cortical implants, and optogenetics—enable “an economy that is neural based and integrated into neural capitalism.”⁴⁸

All continence technologies work to make social surveillance an integral part of everyday life. In McLuhan’s words, television trained us for this. He describes JFK as the iconic TV President because his self-presentation was so compatible and sympatico with the television medium. Nixon, on the other hand, had to work on his relationship with the medium and adjust his

temperament, personality, and appearance to the feedback it provided. He had to reskill himself in the image of his telegenic predecessor. McLuhan observed in Nixon's successful image management and impression rehabilitation project his controlled utilization of feedback from the American television-viewing public:

No longer the slick, glib, aggressive Nixon of 1960, he had been toned down, polished, programmed and packaged into the new Nixon we saw in 1968: earnest, modest, quietly sincere.⁴⁹

Cybernetic self-management or self-governance through controlled utilization of feedback has become everyday life practice with the ubiquity of digital platforms. The Internet of Things (IoT) currently connects an estimated 43 billion devices globally.⁵⁰ The IoT's Quantified Self movement promises its networks of users' *self-knowledge through numbers*. Users can bio-hack and self-repair what ails them with the aid of various digital continence technologies. Instead of heeding marketers' offers of hedonistic pleasures and other forms of instant gratification, users can set up their devices so they're bombarded with health and wellness reminders, effectively creating a noise barrier that shields them from temptation. Users can do a self-audit of how their new capacity for continence is measuring up against past failures, as well as the community of users on the platform. Users can participate and share their data on various social media platforms. The IoT's initial push of continence technologies featured wearable devices, with their always-on capacities extending the technologies users are directly tethered to.

Wearable devices like the Apple Watch take this self-monitoring to an entirely new level (as did the Fitbit—acquired by Alphabet's Google for \$2.1 billion in 2019—before it). However, the paradox of the Apple Watch and technologies like it is that it takes the body, transforms it into information and remediates it back to ourselves, the companies that provide the devices, platforms, services, environments and etc., the advertisers, the government, our friends, an anonymous community of users, etc. The more our behavior goes online the less control we have over the information that modifies our behavior. The more we reskill ourselves to be always visible, measurable, performative, quantifiable, and governable (and the more desire we have to do so), the more we become ungovernable to ourselves.

Importantly, despite its value in collecting, modulating, driving behaviors continence technologies work on the level of the individual, as an extension of the self-help movement—not of publics. By contrast, incontinence technologies work on the level of publics—animating, exciting, confusing, infuriating, and ultimately aiming millions at systems, at institutions, and ultimately at each other in waves of incontinent destruction. Continenence technologies make data within our bodies and others visible to us and standardizes constructive practices of self-governance. Incontinence technologies work invisibly, can be deployed without external oversight, and black box the input-output feedback loop of automated interventions between technologies and users, so it's more difficult for users to discern psychological manipulation by algorithmic BMOD and to organize with other users against this manipulation. To put it simply, step counters and heart-rate monitors offer no antidote to social media constituted tyrannical publics.

Move Fast and Break Things No More?

Cut word lines. Cut music lines. Smash the control images. Smash the control machine. Burn the books. Kill the priests. Kill! Kill! Kill!

Inexorably as the machine had controlled thought feeling and sensory impressions of the workers, the machine now gave the order to dismantle itself and kill the priests⁵¹

William S. Burroughs stared into the world, saw its mutant potential for reshaping “us” or humanity as forces which crush us. He saw potential for extreme administration of neuroplastic power and logos reshaping the world beyond thought of humanity and human thought: “What scared you all into time? Into body? Into shit? I will tell you: the word.” Burroughs’ understanding of control as an organized confluence of affective, emotive, cognitive, informational forces put to work, not in the production of things or value, but in mobilizing molecular (fine-tuning), neuroplastic modulation and mutation as alien forms of connective control (e.g., overconnection and disconnection) or as a constituent destructive plasticity which disassembles and dis-assembles.

The present cultural and political moment of “cybernetic capitalism” or “neurocapitalism” is exemplary of control’s new purpose to not only shape and manage perceptions but to modulate conditions of indiscernibility and incontinence. This modulation shapes publics with creeping

inequities, instabilities, and unknowability. With ChatGPT, Dall-e and other deep-learning models, generative AI technologies invade and inform the complex plastic composition of social life and cultural and symbolic production.⁵² The implications of AI models training on AI-generated data based on are not yet comprehensible. AI has the fundamental ability to create, manipulate, and master language—and by extension, other forms of consciousness. A big concern for future use of AI will be the new intimacy of control it affords and exploits by direct and visceral appeals to human desires. Those with power to steer AI, as Noah Yuval Harari recently warned in a public lecture, will “use the power of intimacy” to shift our views and build or destroy relationships through its mastery of language, because “intimacy is the most effective weapon of all.”⁵³ AI’s ability to “mass produce intimacy” with millions of people builds upon social media’s capture of the attention of publics. It is far more dangerous and more powerful because not only does it plunge directly into subjectivities via its new capacities for creating “fake intimacy,” it does this at scales and velocities and in quantities that exceed human consciousness, and it doesn’t require much in terms of human intervention.

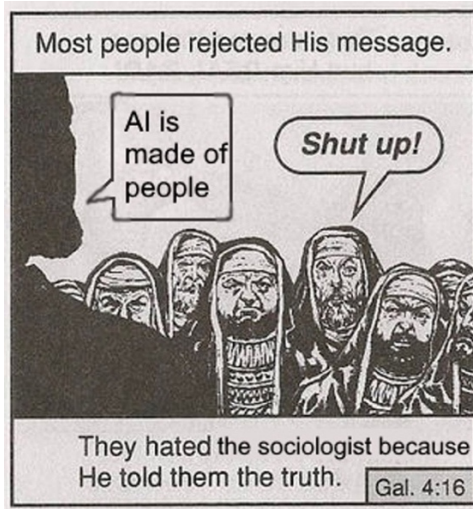


Figure 9.4. A recent “redetourned” comic posted on Twitter.⁵⁴

AI is becoming ubiquitous at the same time different sectors of the knowledge economy regard it warily, as a “new weapon of mass destruction that needs to be regulated very carefully, because unlike nuclear technologies, AI can learn and produce its own AI—even if it does it badly

now.”⁵⁵ Through its mastery of language, it can regulate and reshape our mental and social worlds. Addressing Plato’s cave analogy in the context of the current AI revolution, Harari notes the ways AI is putting users face to face with the fact that reality is the constituent product of social imaginations. According to Harari, “AI has hacked the operating system of human civilization,” which recalls that Burroughsian or Korzybskian insight: “in the beginning was the word.” AI is different from previous tools because it can create; it has plastic power; it recomposes the world as informational and all language becomes computation. What will become of “publics” within and constituted by “computational governance” and “computational force”? Or, as Bratton asks in *The Stack*: “Where should sovereignty reside if not in what is in between us, and derived not from each of us individually but by what draws the world through us?”⁵⁶

Big data, social media, ubiquitous technological devices and computational practices for digital connectedness have provided direct epistemic channels to public consciousness. It has been illustrated—recall Edward Bernays’ detailing of the “art of public manipulation” in *Propaganda* (1928) and its transformation into the “engineering of consent”—that in terms of composing publics, whether for war or for capitalism, it is not the content of the messages exchanged, but rather, what happens when a dopamine-driven strategy for motivation is exploited. For example, such as what happens when algorithms are used to leverage dopamine-driven reward circuitry in the brain and the dopamine centers are primed. It is the BF Skinner theory of variable reward schedules, or “intermittent reinforcement,” introduced in the 1930s in his experiments with rats and “Skinner boxes” but now a strategy proposed by contemporary behavioral scientists (e.g., Nir Eyal) to “hook” users. As Zeynep Tufekci argued almost a decade ago, this era’s “computational politics” are engineered by “the power brokers who own the data or social media environments,” informed by behavioral sciences, refined using experimental approaches on and by profiling contemporary publics—often without consent (informed or otherwise)—to develop methods for persuading and mobilizing people; not just as individuals, but especially in the aggregate, as publics.⁵⁷

This dissertation has argued that plastic publics need to be assessed in terms of theories of control; in particular, those addressing how systems of neuropower, noopolitics, neurocapitalism, and etc. reflexively evolve. It gestures broadly towards countervailing currents—ecosophical approaches and activist neuroaesthetics. It expresses anxiety and hope about possible futures for

plastic publics. In a recent article for *e-flux*, Yuk Hui reflects on the anxiousness/anxiety of philosophers of technology affirming feedback loops as the inevitable path to civilization. He poses the question—since no one really knows at the moment what direction we are steering in:

Can the human escape this positive feedback loop of self-fulfilling prophecy so deeply rooted in contemporary culture? In 1971 Gregory Bateson described a feedback loop that traps alcoholics: one glass of beer won't kill me; okay, I've already started, a second one should be fine; well, two already, why not three? An alcoholic, if they're lucky, might get out of this positive feedback loop by 'hitting bottom'—by surviving a fatal disease or a car accident, for example. Those lucky survivors then develop an intimacy with the divine. Can humans, the modern alcoholics, with all their collective intelligence and creativity, escape this fate of hitting bottom? In other words, can the human take a radical turn and push creativity in a different direction?⁵⁸

The story of control is in the end the story of feedback, but as we have seen feedback is an alternating current and can lead to disciplinary or incontinent publics. It is really difficult to know where anything goes: timing and sequencing will matter. For example, there is a big difference if continence-oriented social technologies (ultimately continent AI) become powerful enough to be truly impactful on a mass social level *after* the “storm” of shit wipes away much of today's continent social structures and institutions. In that event, we would very likely be looking at a new violent authoritarianism so total that the totalitarian states of the mid-twentieth century would seem anarchic by comparison. Plato wondered, why would anyone go willingly towards destruction, and now we know. On the other hand, if continent technologies emerge as a truly countervailing force, that is as a force at the level of publics, not individuals, the results could be radically different. The floodwaters of today's incipient destructive authoritarianism may very well recede but to be replaced by what? Greater rationality and equity or a new docility and Victorianism? The plastic unleashing of human potential or a flat, obtuse sameness for all?

Notes

¹ Fyodor Dostoyevsky, *Notes from the Underground* (1996/1864), <https://www.gutenberg.org/cache/epub/600/pg600-images.html>.

² Aldous Huxley, *Brave New World + Brave New World Revisited* (Toronto: Vintage Canada, 2007), 224–225.

³ Elizabeth Grosz, “Habit Today: Ravaissou, Bergson, Deleuze and Us,” *Body & Society* 19, nos. 2–3 (2013): 224.

⁴ Luciana Parisi, “Automated Cognition and Capital,” in *An Activist Neuroaesthetic Reader*, ed. Warren Neidich (Berlin: Archive Books, 2021), 120.

⁵ Bruce S. McEwen and John H. Morrison, “The Brain on Stress: Vulnerability and Plasticity of the Prefrontal Cortex over the Life Course,” *Neuron* 79, no. 1, July 10, 2013, <https://doi.org/10.1016/j.neuron.2013.06.028>.

⁶ In a 1987 lecture primarily on cinema, “*Qu’est-ce qu’un acte de création?*” [“What is the Creative Act?”], I believe is where Gilles Deleuze introduces his societies of control concept, describing it as an epoch the world is entering—rather it is a process that extends from the World War II era and will continue for another forty or fifty years. Here—unlike the brief “Postscript” for *L’Autre* or his sprawling conversation with Negri (discussed in Chapter 4 of this dissertation)—he approaches control societies genealogically. He reviews Foucault’s analyses of sovereign and disciplinary societies—mostly the latter—to clarify that not only did Foucault know that despite carrying various habits and remnants of disciplinary societies into the present, societies of a “different type” were emerging and should be called—following Burroughs, who Foucault deeply admired (Deleuze reminds his audience)—control societies. See Gilles Deleuze, “*Qu’est-ce qu’un acte de création?*” [“What is the Creative Act?”] (1987), lecture given as part of the “Tuesdays of the [FEMIS] Foundation,” March 17, 1987, https://www.youtube.com/watch?v=a_hifamdISs. With English subtitles. See also, Nadine Epstein, “Et Voila! Le Minitel,” *New York Times Magazine*, March 9, 1986, <https://www.nytimes.com/1986/03/09/magazine/et-voila-le-minitel.html>.

⁷ See also, Tiqqun on the highway as “the perfect apparatus.” In Tiqqun, *This is Not a Program* (Los Angeles: Semiotext(e), 2011), 151–153.

⁸ Manos Tsakiris, “Politics is visceral,” ed. Sally Davies, *aeon*, September 18, 2020, <https://aeon.co/essays/politics-is-in-peril-if-it-ignores-how-humans-regulate-the-body>.

⁹ Tiziana Terranova, “Ordinary Psychopathologies of Cognitive Capitalism,” in *An Activist Neuroaesthetic Reader*, ed. Warren Neidich (Berlin: Archive Books, 2021), 70–90.

¹⁰ See Sam Lavigne and Tega Brian’s web-based art project “The New Organs,” <https://neworgans.net>.

¹¹ See Oscar Schwartz, “Digital Ads are Starting to Feel Psychic,” *Outline*, July 13, 2018, <https://theoutline.com/post/5380/targeted-ad-creepy-surveillance-facebook-instagram-google-listening-not-alone>.

¹² Manos Tsakiris, “Politics is visceral,” ed. Sally Davies, *aeon*, September 18, 2020, <https://aeon.co/essays/politics-is-in-peril-if-it-ignores-how-humans-regulate-the-body>.

¹³ Tiziana Terranova, “Ordinary Psychopathologies of Cognitive Capitalism,” in *An Activist Neuroaesthetic Reader*, ed. Warren Neidich (Berlin: Archive Books, 2021), 70–90.

¹⁴ See Sam Lavigne and Tega Brian’s web-based art project “The New Organs,” <https://neworgans.net>.

¹⁵ See Oscar Schwartz, “Digital Ads are Starting to Feel Psychic,” *Outline*, July 13, 2018, <https://theoutline.com/post/5380/targeted-ad-creepy-surveillance-facebook-instagram-google-listening-not-alone>.

¹⁶ Parisi, “Automated Cognition and Capital,” 109.

¹⁷ Franco “Bifo” Berardi, “Neuro-Aesthetics and the Unimaginable,” in *An Activist Neuroaesthetic Reader*, ed. Warren Neidich (Berlin: Archive Books, 2021), 177.

¹⁸ Franco “Bifo” Berardi, *Heroes. Mass Murder and Suicide* (London and New York: Verso, 2015), 219.

¹⁹ Travis Green, “Algorithmic Behavior Modification by Big Tech is Crippling Academic Data Science Research,” *Towards Data Science*, April 18, 2022, <https://towardsdatascience.com/algorithmic-behavior-modification-by-big-tech-is-crippling-academic-data-science-research-c600d4fe696b>.

²⁰ Gilles Deleuze, “Postscript on the Societies of Control,” *October* 59 (Winter 1992): 4, <http://www.jstor.org/stable/778828>.

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- ²¹ See discussion between Paul Virilio and Sylvère Lotringer on Burroughs in *Crepuscular Dawn*, trans. Mike Taormina (New York and Los Angeles: Semiotext(e), 2002), 106–107. Also see Luciana Parisi, “The Alien Subject of AI,” *Subjectivity* 12 (2019): 27–48. In Parisi’s article, the alien (i.e., the denaturalized) subject of artificial intelligence refers to the computer’s mode of thinking through humans, literally, by learning/absorbing human culture through data analysis of behaviors, contextual use of content, sourcing of knowledge, learning styles. With the contemporary subject of automated control, Parisi writes, “It is as if the disciplinary version of the human subject is continuously and variably dramatised through an infinite plethora of scripts poised towards what we have already seen, experienced, felt: habituations, familiarities, recurrent compulsive pleasures. But underneath the eternal returns of these dramatisations that re-impart the servo-mechanic image of technology made in the image of man there is another space for an alien subject, lurking beneath the smooth service of performativity” (31).
- ²² See Parisi’s discussion of Bratton in “The Alien Subject of AI” and Benjamin H. Bratton, *The Stack: On Software and Sovereignty* (Cambridge, MA and London: The MIT Press, 2015), 8.
- ²³ William S. Burroughs, *Naked Lunch* (New York: Grove Weidenfeld, 1959/1990), 148–149.
- ²⁴ Tony D. Sampson, in *An Activist Neuroaesthetic Reader*, ed. Warren Neidich (Berlin: Archive Books, 2021), 322.
- ²⁵ Ana Teixeira Pinto, “Feedback Forms,” in 2018–2019 HTDTWT Seminar series, Dutch Art Institute, Seminar 6: April 2019, <https://dutchartinstitute.eu/page/12015/2018-2019-htdtwt-seminar-ana-teixeira-pinto-feedback-forms---from>.
- ²⁶ Parisi, “The Alien Subject of AI,” 29.
- ²⁷ Parisi, “The Alien Subject of AI,” 30.
- ²⁸ Plato, *The Republic*, Books VIII and IX (360 B.C.E.), trans. Benjamin Jowett, *The Internet Classics Archive*, <http://classics.mit.edu/Plato/republic.9.viii.html> and <http://classics.mit.edu/Plato/republic.10.ix.html>.
- ²⁹ See Helen Steward, “Akrasia,” *Routledge Encyclopedia of Philosophy*, <https://www.rep.routledge.com/articles/thematic/akrasia/v-1>.
- ³⁰ Plato, *The Republic*, Books II and VII (360 B.C.E.), trans. Benjamin Jowett, *The Internet Classics Archive*, <http://classics.mit.edu/Plato/republic.3.ii.html> and <http://classics.mit.edu/Plato/republic.8.vii.html>.
- ³¹ Christopher Burr, Nello Cristianini, and James Ladyman, “An Analysis of the Interaction Between Intelligent Software Agents and Human Users,” *Minds & Machines* 28 (2008): 735–774, <https://doi.org/10.1007/s11023-018-9479-0>.
- ³² Natasha Dow Schüll, *Addiction by Design: Machine Gambling in Las Vegas* (Princeton and Oxford: Princeton University Press, 2012), 12.
- ³³ Anna Munster, “Distended Nervous System: Networked Media and its Neurological Turns,” in *An Activist Neuroaesthetic Reader*, ed. Warren Neidich (Berlin: Archive Books, 2021), 68. This essay was originally published in Warren Neidich (ed.), *The Psychopathologies of Cognitive Capitalism: Part Three* (Berlin: Archive Books, 2017).
- ³⁴ Christopher Till, “Propaganda through ‘reflexive control’ and the mediated construction of reality,” *new media & society* 23, no. 6 (2021): 1362–1378, <https://journals.sagepub.com/doi/pdf/10.1177/1461444820902446>.
- ³⁵ Diane Chotikul, “The Soviet Theory of Reflexive Control in Historical and Psychocultural Perspective: A Preliminary Study” [technical report], Naval Postgraduate School, Monterey, CA (November 1984–July 1986), <https://apps.dtic.mil/sti/pdfs/ADA170613.pdf>.
- ³⁶ “A ‘reflex’ itself involves the specific process of imitating the enemy’s reasoning or imitating the enemy’s possible behavior and causes him [sic] to make a decision unfavorable to himself [sic].” See Thomas cited in Till, “Propaganda through ‘reflexive control,’” 1368. For fuller context, see Timothy L. Thomas, “Russia’s Reflexive Control Theory and the Military,” *Journal of Slavic Military Studies* 17 (2014): 237–256.
- ³⁷ Jonathan Haidt, “Yes, Social Media Really is Undermining Democracy,” *Atlantic*, July 8, 2022, <https://www.theatlantic.com/ideas/archive/2022/07/social-media-harm-facebook-meta-response/670975/>.
- ³⁸ Dominic Boyer, “Digital Fascism,” *Fieldsights*, April 15, 2021, <https://culanth.org/fieldsights/digital-fascism>.
- ³⁹ Adrienne LaFrance, “Facebook Is a Doomsday Machine,” *The Atlantic*, December 2012, <https://www.theatlantic.com/technology/archive/2020/12/facebook-doomsday-machine/617384/>.
- ⁴⁰ Marshall McLuhan, *Understanding Media: The Extensions of Man* (Cambridge, MA and London: The MIT Press, 1994/1964), 19.
- ⁴¹ Tiziana Terranova, *Network Culture: Politics for the Information Age* (London and Ann Arbor, MI: Pluto Press, 2004), 4 and 100.

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- ⁴² Nigel Thrift, “Pass It On: Towards a Political Economy of Propensity,” in *The Social after Gabriel Tarde: Debates and Assessments*, ed. Matei Candea (London: Routledge, 2010), 260 and 263.
- ⁴³ Clive Thompson, “Clive Thompson on How Twitter Creates a Social Sixth Sense,” *Wired*, June 6, 2007, <http://www.wired.com/2007/06/st-thompson-4/>.
- ⁴⁴ Till, “Propaganda through ‘reflexive control.’”
- ³⁵ Paul Virilio, *A Landscape of Events*, trans. Julie Rose (Cambridge, MA and London: The MIT Press, 2000), 90–91.
- ⁴⁶ Marshall McLuhan, in Eric Norden, “Playboy Interview: Marshall McLuhan—A Candid Conversation with the High Priest of Popcult and Metaphysician of Media,” *Playboy Magazine* 16, no. 3 (March 1969): 53–74, 158.
- ⁴⁷ Warren Neidich (ed.), “Introduction,” *An Activist Neuroaesthetic Reader* (Berlin: Archive Books, 2021), 27. See also, Part 2 of *Plastic Publics*, aka “Where Does This Shit Go?”
- ⁴⁸ Neidich, “Introduction,” 27–28.
- ⁴⁹ McLuhan, “Playboy Interview.”
- ⁵⁰ See Metro21: Smart Cities Institute, “World Economic Forum Releases State of the Connected World, 2023 Edition,” January 2023, <https://www.cmu.edu/metro21/news/news-articles/news-articles-2023/2023-january/wef-state-of-the-connected-world-2023.html>.
- ⁵¹ William S. Burroughs, *The Soft Machine* (New York: Grove Press, 1961), 92–93.
- ⁵² AI is being used to write texts and code, make images, compose music, and also, to create deep fakes and to simulate different kinds of intimate relationships with human beings (caregiving, sexual, therapeutic, etc.).
- ⁵³ Yuval Noah Harari, “AI and the Future of Humanity,” keynote lecture, Frontiers Forum, April 29, 2023, Montreux, Switzerland, <https://www.youtube.com/watch?v=LWiM-LuRe6w&t=179s>.
- ⁵⁴ Untitled tweet by blairaf.bsky.social (@blairaservice), Twitter, July 5, 2023, <https://twitter.com/blairaservice/status/1676290889306480649>.
- ⁵⁵ Harari, “AI and the Future of Humanity.”
- ⁵⁶ Bratton, *The Stack*, 327–328.
- ⁵⁷ Zeynep Tufekci, “Engineering the public: Big data, surveillance, and computational politics,” *First Monday* 19, no. 7 (July 2014), <https://firstmonday.org/ojs/index.php/fm/article/view/4901>.
- ⁵⁸ Yuk Hui, “ChatGPT, or the Eschatology of Machines,” *e-flux Journal* 137 (June 2023), <https://www.e-flux.com/journal/137/544816/chatgpt-or-the-eschatology-of-machines/>.

POSTSCRIPT

Mapping Shit, or Where Does This Shit Go?

I would like to conclude this dissertation with a brief outline of my upcoming work exploring incontinence, inquiring into the flow of continence vs. incontinence, to explore where is shit directed now? It builds upon the supposition that incontinence is stratified and utilized (by the managerial class) to throw one group against the other, or, shit against the fan. This project was originally intended as the next chapter in this dissertation—the first chapter in the part two of *Plastic Publics* that explores incontinence as techniques for management of more than human public space and social practices.

The project currently opens with an approach the toilet as the newest panoptic observatorium for collecting biometric data and tracking user habits. It looks at some historical examples of the ways waste mediates the shifting parameters of publicity and privacy, control and autonomy, and the ways our relationship to bodily waste is transformed by the techniques by which it is managed, by the habitus in which everyday practices and social relations take place, and by which personal habits and conventions are formed. In *The Ethics of Waste*, Gay Hawkins observes that “the technocratic logics of efficiency and concealment have produced a distanced relation with wasted things even as amounts of waste have escalated phenomenally.” Yet, for ancient civilization, excreta was a powerful indicator that one’s daily life was spent in cohabitation with unknown, powerful immaterial forces. From the Roman Empire to the nineteenth-century’s hygienists, it was believed supernatural miasmas and mephitic airs arose from the sewers and infected people, yet there was also a strong tradition of semi-private or public and shared toilet practices. Human waste was an everyday life occurrence that most often happened in the company of one’s family or peers.

The Enlightenment push toward improved hygienic conditions required a strongly delineated distinction between public and private space—as well as between public and private activities—that as of the nineteenth century was enforced by public health officials mandating

there should be a room located inside or outside the home reserved principally for these activities. As Roland Barthes memorably notes in *Sade, Fourier, Loyola*: “When written, shit does not have an odor.”¹ As most of the literature tells us, discourses and epistemes determine what is regarded as appropriately public, as well as what is of value and what is waste. Over the course of centuries of “civilizing,” we have become conditioned to ascribe little value to our bodily waste, to devalue it, to conceal, deodorize, and disappear it. How we handle our waste, even how we think about it, is generally to give it as little thought as possible or, it manifests as a paradoxical desire to purify what is natural and to distance ourselves from the contents of our own bodies as a potential source of danger. It was Freud who designated smell as the meeting point of desire and shame within the paradox of civilization; and George Orwell who remarked on the hypocrisy of those (i.e., anticapitalist revolutionaries) who couldn’t stand the smell of the working-class people they valorized. Orwell noted this in *Road to Wigan Pier* (1937), in which he also commented: “Many people. . . imagine that they can abolish class-distinctions without making any uncomfortable change in their own habits and ‘ideology.’” Ideology does not provide working models of the world. If we don’t realize this, and if we move forward with no changes in thought, no attention to our mental habits, without learning from our mistakes, then—as Orwell cautioned—“at the end of it the smile will be on the face of the tiger.”²

Shit, or what Georges Bataille referred to in “The Psychological Structure of Fascism” as *heterogeneous matter*, is the one thing that modern consciousness cannot tolerate. Heterogeneous matter is all that unassimilable and repulsive. It disturbs the need for order, for conceptual clarity, for dialectical incorporation of even the most repulsive phenomena into a cohesive system. It is, for many, what the body cannot make use of. The most repulsive can easily, as Bataille also pointed out, become the most beautiful, but only when it acquires use-value. This project details how, with new technocratic tools we have finally managed to make shit useful by effectively transforming it into information that tells us how to better manage our health and bodies, and makes our personal habits useful for managing behavioral standards. More recently, waste has become source material for various forms of alternative energy. This chapter will conclude by explaining how shit is not only useful, but also ultimately socially productive.

This conflation of shit and subjectivization, continence and incontinence, will be explored in relation to Dominique Laporte's *Histoire de la merde* [*History of Shit*], in particular his argument that upon critical review of human fecal waste, the "history of shit becomes the history of subjectivity."³ The history of the containment of bodily waste is tied to the evolution of a bourgeois subjectivity. Laporte's *History of Shit*, published three years after Michel Foucault's *Discipline and Punish*, takes a genealogical approach to the management of waste. The Royal Edict of Villers-Cotterets (1539) is a significant event in this history because it decreed the privatization of waste management—literally, "to each his own shit." Around this time, there's also the emergence of the individual bed and the individual tomb—to protect against olfactory indignity in sleep and in death. To each his cesspool and to each his grave.⁴ Laporte's book was published in France in 1978, one year after Jacques Attali's *Noise: The Political Economy of Music*, in which he claims that music says a lot about the society it is part of, and as the bounds of a given musical paradigm are pushed, the music undergoes a change. If we look toward society, we can expect to find similar or resonant changes with regards to society's relationship to its own waste.

When Laporte published his genealogical account of how the privatization of toilet practices and the formation of modern subjectivity are linked, he was concerned with how the history of language and its utility is bound to how human waste has been treated by official culture—and by the push to calculate its value through capitalism's "arithmetic of *besoin*" (recalling William S. Burroughs' "algebra of need." He advocates "the return of excrement to fields of cultural production and consumption whose proper operation depends on its repression."⁵ This project is still in development, but in addition to addressing the new social use value of shit and incontinence, it will look at some of the ways "toilet resources" (the newly mandated 'positive' terminology for managing human waste) will be some serious shit in the near future.

Notes

¹ Barthes is making a play on Roman emperor Vespasian's infamous coinage of *pecunia non olet* [money does not stink] after he imposed a tax on the collection of urine from public urinals. See Roland Barthes, *Sade, Fourier, Loyola*, trans. Richard Miller (Berkeley and Los Angeles: University of California Press, 1989), 137.

² George Orwell, *The Road to Wigan Pier* (London: Victor Gollancz, 1937).

³ Dominique Laporte, *The History of Shit*, trans. Rodolphe el-Khoury (Cambridge, MA and London: The MIT Press, 2000), x.

⁴ Laporte, *The History of Shit*, xii.

⁵ Laporte, *The History of Shit*, x.

BIBLIOGRAPHY

- Agamben, Giorgio. *Homo Sacer: Sovereign Power and Bare Life*. Translated by Daniel Heller-Roazen. Stanford: Stanford University Press, 1998.
- Ahmed, Sara. *What's the Use? On the Uses of Use*. Durham, NC: Duke University Press, 2019.
- Akin, William E. *Technocracy and the American Dream: The Technocrat Movement, 1900–1941*. Berkeley: University of California Press, 1977.
- Albarelli, Jr., H.P. *A Terrible Mistake: The Murder of Frank Olson and the CIA's Secret Cold War Experiments*. Waterville, OR: Trine Day, 2009.
- Ampère, André-Marie. *An Essay on the Philosophy of Sciences* [*Essai sur la philosophie des sciences*] (1838). <https://archive.org/details/essaisurlaphilos00amp>.
- Andrejevic, Mark. *Infoglut: How Too Much Information is Changing the Way We Think and Know*. New York and London: Routledge, 2013.
- Asaridou, Salomi S. and James M. McQueen. "Speech and music shape the listening brain: Evidence for shared domain-general mechanisms." *Frontiers of Psychology* 4, no. 321 (June 2013). <https://doi.org/10.3389/fpsyg.2013.00321>.
- Ashby, W. Ross. *An Introduction to Cybernetics*, 2nd ed. London: Chapman & Hall Ltd., 1999/1957.
- Ashby, W. Ross. *Design for a Brain*. New York: John Wiley and Sons, 1952.
- Attali, Jacques. *Noise: The Political Economy of Music*. Translated by Brian Massumi. Minneapolis and London: University of Minnesota Press, 2009/1985/1977.
- Bakan, David. "Behaviorism and American Urbanization." *Journal of the History of the Behavioral Sciences* 2, no. 1 (January 1966): 5–28.
- Ballard, J.G. "Fictions of Every Kind." In *Books and Bookmen* (February 1971). https://www.jgballard.ca/non_fiction/jgb_fictions.html.
- Ballard, J.G. "Terminal Documents: Burroughs reviewed by Ballard." *The Ambit* 27, London (1966). https://www.jgballard.ca/non_fiction/jgb_reviews_burroughs.html.
- Ballard, J.G. *Miracles of Life: Shanghai to Shepperton, An Autobiography*. London: Liveright, 2013.
- Bandura, Albert. *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall, 1977.
- Barad, Karen. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham and London: Duke University Press, 2007.
- Barbrook, Richard. *Imaginary Futures: From Thinking Machines to the Global Village*. London and Ann Arbor, MI: Pluto Press, 2007.

- Barbrook, Richard. *Imaginary Futures: From Thinking Machines to the Global Village*. Pre-press draft, August 31, 2006.
- Barrett, Lisa Feldman. *Seven and a Half Lessons about the Brain*. Boston and New York: Houghton Mifflin Harcourt, 2020.
- Barthes, Roland. "The Death of the Author." In *Image, Music, Text*, translated by Stephen Heath, 142–148. London: Fontana Press, 1977.
- Barthes, Roland, and Richard Howard. "Lecture in Inauguration of the Chair of Literary Semiology, Collège de France, January 7, 1977." *October* 8 (Spring 1979): 3–16.
- Barthes, Roland. "Plastic." In *Mythologies*, translated by Annette Lavers, 97–99. New York: Hill and Wang, 1956.
- Barthes, Roland. *Sade, Fourier, Loyola*. Translated by Richard Miller. Berkeley and Los Angeles: University of California Press, 1989/1976.
- Bartle, Gregory. "Benthamites and Lancasterians—The Relationship between the followers of Bentham and the British and Foreign School Society during the Early Years of Popular Education." *Utilitas* 3, no. 2 (November 1991): 275–288.
- Bassett Jr., David R. "Scientific Contributions of A. V. Hill: Exercise Physiology Pioneer." *Journal of Applied Physiology* 93 (2002): 1567–1582. 10.1152/jappphysiol.01246.2001.
- Bates, David W. "Unity, Plasticity, Catastrophe: Order and Pathology in the Cybernetic Era." In *Catastrophes: A History and Theory of an Operative Concept*, edited by Nitzan Lebovic and Andreas Killen, 32–54. Berlin and Boston: De Gruyter Oldenbourg, 2014.
- Bateson, Gregory. "The Cybernetics of 'Self': A Theory of Alcoholism." *Psychiatry* 34, no. 1 (1971): 1–18.
- Bateson, Gregory. *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*. Northvale, NJ and London: Jason Aronson Inc., 1987/1972.
- Bateson, Nora, dir. *An Ecology of Mind: A Daughter's Portrait of Gregory Bateson*. 2010; Oley, PA: Bullfrog Films. Documentary film.
- Baudrillard, Jean. *Forget Foucault*. Translated by Phil Beitchman, Lee Hildreth, and Mark Polizzotti. New York: Semiotext(e), 2007.
- Beard, George. *American Nervousness, its Causes and Consequences: A Supplement to Nervous Exhaustion (Neurasthenia)*. New York: G. P. Putnam's Sons, 1881.
- Beck, Julie. "'Americanitis': The Disease of Living Too Fast." *The Atlantic*, March 11, 2016. <https://www.theatlantic.com/health/archive/2016/03/the-history-of-neurasthenia-or-americanitis-health-happiness-and-culture/473253/>.
- Becker, Konrad, and Felix Stadler, eds. *Digital Unconscious: Nervous Systems and Uncanny Predictions!* Brooklyn: Autonomedia, 2021.
- Beller, Jonathan. *The Message is Murder: Substrates of Computational Capital*. London: Pluto Press, 2018.

- Benhabib, Seyla. "The Embattled Public Sphere: Hannah Arendt, Juergen Habermas, and Beyond." *Theoria: A Journal of Social and Political Theory* 90 (December 1997): 1–24.
- Benjamin, Walter. "Author as Producer." Translated by John Heckman, 1970. <https://www.marxists.org/reference/archive/benjamin/1970/author-producer.htm>.
- Benjamin, Walter. *Illuminations*. Translated by Harry Zohn. New York: Schocken Books, 2007/1968.
- Berardi, Franco "Bifo." *After the Future*. Edited by Gary Genosko and Nicholas Thoburn. Oakland: AK Press, 2011.
- Berardi, Franco "Bifo." "And. Phenomenology of the End. Cognition and Sensibility in the Transition from Conjunctive to Connective Model of Social Communication," PhD dissertation, School of Art, Design and Architecture, Aalto University, Helsinki, 2014. <https://research.aalto.fi/en/publications/and-phenomenology-of-the-end-cognition-and-sensibility-in-the-tra>.
- Berardi, Franco "Bifo." *And. Phenomenology of the End: Cognition and Sensibility in the Transition from the Conjunctive to Connective Mode of Social Communication*. Helsinki: Aalto Publications, 2014.
- Berardi, Franco "Bifo." *Breathing: Chaos and Poetry*. South Pasadena: Semiotext(e): 2018.
- Berardi, Franco "Bifo." "The Digital Explosion of the Unconscious." In *Digital Unconscious: Nervous Systems and Uncanny Predictions!*, edited by Konrad Becker and Felix Stadler, 47–60. Brooklyn: Autonomedia, 2021.
- Berardi, Franco "Bifo." *Futurability: The Age of Impotence and the Horizon of Possibility*. London and New York: Verso, 2019.
- Berardi, Franco "Bifo." *Heroes. Mass Murder and Suicide*. London and New York: Verso, 2015.
- Berardi, Franco "Bifo." "Neuro-Aesthetics and the Unimaginable." In *An Activist Neuroaesthetic Reader*, edited by Warren Neidich, 166–177. Berlin: Archive Books, 2021.
- Berardi, Franco "Bifo." "The Second Coming." *e-flux journal* 83 (June 2017). <https://www.e-flux.com/journal/83/142355/the-second-coming/>.
- Berardi, Franco "Bifo." *The Second Coming*. Cambridge, UK and Malden, MA: Polity, 2019.
- Berardi, Franco "Bifo." *The Third Unconscious*. London and New York: Verso Books, 2021.
- Bergmann, Matthias, Thomas Jahn, Tobias Knobloch, Wolfgang Krohn, Christian Pohl, Engelbert Schramm. *Methods for Transdisciplinary Research: A Primer for Practice*. Translated by Ronald C. Faust. Frankfurt/New York: Campus Verlag, 2012.
- Bernard, Claude. *Introduction to the Study of Experimental Medicine*. Translated by H.C. Greene. New York: Collier, 1961/1865.

- Bernard, Claude. *Lectures on the Phenomena of Life Common to Animals and Plants*. Translated by Hebbel E. Hoff, Roger Guillemin, and Lucienne Guillemin. Springfield, IL: Thomas, 1974.
- Bernays, Edward L. "The Engineering of Consent." *The Annals of the American Academy of Political and Social Science* 250, no. 1 (1947): 113–120.
- Bernays, Edward L. *Propaganda*. New York: Horace Liveright, 1928.
- Bernstein, J.H. "Transdisciplinarity: A review of its origins, development, and current issues." *Journal of Research Practice* 11, no. 1 (2015).
<http://jrp.icaap.org/index.php/jrp/article/view/510/412>.
- Berry, David. "Interview with Alexander Galloway. A Network is a Network is a Network: Reflections on the Computational and the Societies of Control." *Theory, Culture & Society* 33, no. 4 (June 2015): 151–172.
- B.F. Skinner – Teaching Machines and Programmed Learning* (1960). Film. Washington, DC: Division of Instructional Service of the National Education Association.
<https://www.youtube.com/watch?v=CFYruzWeFwQ>.
- Biddle, Erika. "Between Self-Control and Self-Invention, What Becomes of the Incontinent Person?" *Re: Turns*. York and Ryerson Universities, Toronto, March 11–12, 2016.
- Biddle, Erika. "Discipline and Incontinence: The Socialization of Control." *This is Not a Symptom*. South London Gallery, London, February 18, 2015.
- Biddle, Erika. "Freedom and Torture: The New Architecture of Domination and Refusal." *Communicado & Cultura* 15 (2013): 73–88.
- Biddle, Erika. "Meeting a Patient as a Singular Event: A Philosophical Reflection." *Aporia* 2, no. 3 (2010): 18–26.
- Biddle, Erika. "Polymorphous Techniques of Power: Obama and the Priapism of Affectual Regimes." *Network Politics: Objects, Subjects and New Political Affects*. Infoscapes Lab, Ryerson University, Toronto, October 22–23, 2010.
- Biddle, Erika. "Polymorphous Techniques of Power: The Priapism of Affectual Regimes," *The Atrocity Organization: JG Ballard & the Technologies of Psychopathology Management*. University of London, London, UK, November 10, 2009.
- Biddle, Erika. "Room for Learning: Adapt, Transform, Transgress." *Capacious: Affect Inquiry/Making Space Conference*. Millersville University, Lancaster, PA, August 8–11, 2018.
- Bobnich, Christopher, and Pierre Destrée, eds. *Akrasia in Greek Philosophy: From Socrates to Plotinus*. Leiden and Boston: Brill, 2007.
- Boden, Margaret A. *Mind as Machine: A History of Cognitive Science*, Volume 1. Oxford: Oxford University Press, 2006.
- Boeder, Pieter. "Habermas' Heritage: The Future of the Public Sphere in the Network Society." *First Monday* 10, no. 9 (September 5, 2005).
<http://firstmonday.org/article/view/1280/1200>.

- Bogost, Ian. "The Age of Social Media is Ending." *The Atlantic*, November 10, 2022. <https://www.theatlantic.com/technology/archive/2022/11/twitter-facebook-social-media-decline/672074/>.
- Bogost, Ian. "The Metaverse Is Bad." *The Atlantic*, October 21, 2021. <https://www.theatlantic.com/technology/archive/2021/10/facebook-metaverse-name-change/620449/>.
- Borch, Christian. *The Politics of Crowds: An Alternative History of Sociology*. Cambridge and New York: Cambridge University Press, 2012.
- Borch, Christian. "The Exclusion of the Crowd: The Destiny of a Sociological Figure of the Irrational." *European Journal of Social Theory* 9, no. 1 (2006): 83–102. <https://doi.org/10.1177/1368431006060464>.
- Bordogna, Francesca. *William James at the Boundaries: Philosophy, Science, and the Geography of Knowledge*. Chicago: University of Chicago Press, 2008.
- Boring, Edwin Garrigues. *A History of Experimental Psychology*, 2nd ed. New York: Appleton-Century-Crofts, 1950.
- Boyd, Danah. "Social Network Sites as Networked Publics: Affordances, Dynamics, and Implications." In *A Networked Self: Identity, Community, and Culture on Social Network Sites*. Edited by Zizi Papacharissi, 39–58. New York and London: Routledge, 2011.
- Boyer, Dominic. "Digital Fascism." *Fieldsights*, April 15, 2021. <https://culanth.org/fieldsights/digital-fascism>.
- Bradley, Ed. "MK-ULTRA/Mind Control Experiments." *60 Minutes* [transcript], WDVM-TV, CBS Network, Washington, DC, December 23, 1984. <https://www.cia.gov/readingroom/docs/CIA-RDP88-01070R000301530003-5.pdf>.
- Bratich, Jack Z. *On Microfascism: Gender, War, and Death*. Brooklyn: Common Notions, 2022.
- Bratton, Benjamin H. *The Stack: On Software and Sovereignty*. Cambridge, MA and London: The MIT Press, 2015.
- Bray, Abigail. "Chemical-Control™®: From the Cane to the Pill." In *Deleuze and New Technology*, edited by Mark Poster and David Savat, 82–103. Edinburgh: Edinburgh University Press, 2009.
- Bringuier, Jean-Claude. *Conversations with Jean Piaget*. Translated by Basia Miller Gulati. Chicago: The University of Chicago Press, 1980.
- Britzman, Deborah. "Structures of feeling in curriculum and teaching." *Theory into Practice* 31 (3): 252–258.
- Brown, Bill. "Henri Lefebvre's *The Production of Space*." *Not Bored!* <https://www.notbored.org/space.html>.
- Browning, Webster E. "Joseph Lancaster, James Thomson, and the Lancasterian System of Mutual Instruction, with Special Reference to Hispanic America." *The Hispanic*

- American Historical Review* 4, no. 1 (February 1921). <https://archive.org/details/jstor-2506084>.
- Bucher, Tania. *If . . . Then: Algorithmic Power and Politics*. New York: Oxford University Press, 2018.
- Buckley, Kerry W. "Behaviorism and the Professionalization of American Psychology: A Study of John Broadus Watson, 1878–1958." PhD dissertation, University of Massachusetts, Amherst, 1982, 5. <https://scholarworks.umass.edu/dissertations/AAI8210301>.
- Buckley, Kerry W. "The Selling of a Psychologist: John Broadus Watson and the Application of Behavioral Techniques to Advertising." *Journal of the History of the Behavioral Sciences* 18 (July 1982): 207–221.
- Buckley, Kerry W. *Mechanical Man: John B. Watson and the Beginnings of Behaviorism*. New York: The Guilford Press, 1989.
- Budarick, John. "The elasticity of the public sphere: Expansion, contraction and 'other' media." In *Making Publics, Making Places*, edited by Mary Griffiths and Kim Barbour, 9–26. Adelaide: University of Adelaide Press, 2016.
- Burr, Christopher, Nello Cristianini, and James Ladyman. "An Analysis of the Interaction Between Intelligent Software Agents and Human Users." *Minds & Machines* 28 (2008): 735–774. <https://doi.org/10.1007/s11023-018-9479-0>.
- Burroughs, William S. *The Adding Machine: Selected Essays*. New York: Grove, 2013.
- Burroughs, William S. *Ali's Smile/Naked Scientology*. Bonn: Expanded Media Editions, 1978/1973/1972.
- Burroughs, William S. *APO-33 Bulletin, A Metabolic Regulator Health Bulletin: APO-33, A Metabolic Regulator*. New York: Fuck You Press, 1965.
- Burroughs, William S. "The Death of Opium Jones." *New Statesman* 71, no. 1826 (March 11, 1966). <https://www.newstatesman.com/archive/2014/02/say-it-country-simple-most-folks-enjoy-junk-william-s-burroughs-addiction-rehab-and>.
- Burroughs, William S. "Do You Remember Tomorrow?" *Mayfair* 3, no. 8 (August 1968). https://realitystudio.org/images/bibliographic_bunker/mens_mags/pdf/1968.08.mayfair.pdf.
- Burroughs, William S. "'Doing Easy.' An Essay by William S. Burroughs." *Mogadonia*, July 31, 2008. <https://mogadonia.tumblr.com/post/44274156/doing-easy-an-essay-by-william-s-burroughs>.
- Burroughs, William S. *The Electronic Revolution*. Berlin: Expanded Media Editions, 1970.
- Burroughs, William S. *Exterminator!* New York: The Viking Press, 1973/1966.
- Burroughs, William S. "I, William Burroughs, Challenge You, L. Ron Hubbard." *Mayfair* 5, no. 1 (March 1970). https://realitystudio.org/images/bibliographic_bunker/mens_mags/pdf/1970.01.mayfair.pdf.

- Burroughs, William S. *Interzone*. Edited by James Grauerholz. New York: Penguin Books, 1990.
- Burroughs, William S. *Interzone*. Edited by James Grauerholz. New York: Viking, 1989.
- Burroughs, William S. "The Invisible Generation" (1966). In *Audio Culture: Readings in Modern Music*, revised edition, edited by Cristoph Cox and Daniel Warner, 334–340. New York: Bloomsbury, 2017.
- Burroughs, William S. "The Limits of Control." In *Schizo-Culture: The Book*, edited by Sylvère Lotringer, 38–43. South Pasadena, CA: Semiotext(e), 2013.
- Burroughs, William S. *Mayfair Academy Series More or Less*. Brighton: Urgency Press, 1973.
- Burroughs, William S. *Naked Lunch*. New York: Grove Weidenfeld, 1990/1987/1959.
- Burroughs, William S. *Naked Lunch: The Restored Text*. Edited by James Grauerholz and Barry Miles. New York: Grove Press, 2001.
- Burroughs, William S. *Nova Express*. New York: Grove Press, 1992/1964.
- Burroughs, William S. *Queer: A Novel*. New York: Viking Press, 1985.
- Burroughs, William S. *Rub Out the Words: The Letters of William S. Burroughs, 1959–1974*. Edited by Bill Morgan. London: Penguin Books, 2012.
- Burroughs, William S. *The Soft Machine*. New York: Grove Press, 1966/1961.
- Burroughs, William S. *The Ticket that Exploded: The Restored Text*. New York: Grove Press, 2014/1962.
- Burroughs, William S. and Brion Gysin. *The Third Mind*. New York: The Viking Press, 1978.
- Burroughs, William S. "William Burroughs Q&A." In *Schizo-Culture: The Event*, edited by Sylvère Lotringer and David Morris, 161–165. South Pasadena, CA: Semiotext(e), 2013.
- Butler, Judith. "Bodies and Power, Revisited." *Radical Philosophy* 114 (July/August 2002). <https://www.radicalphilosophy.com/article/bodies-and-power-revisited>.
- Butler, Judith. *The Psychic Life of Power: Theories in Subjection*. Stanford: Stanford University Press, 1997.
- Cameron, Donald Ewen. "The Day Hospital: An Experimental Form of Hospitalization." Annual Meeting of the American Psychiatric Association, New York, May 19–23, 1947. MG 1098.
- Cameron, Donald Ewen. "Presidential Address given by Dr. Cameron." McGill University Archives, MG 1098/3 [acc. no. 387; ref. 38/220/1/53].
- Cameron, Donald Ewen. "Psychic Driving." *American Journal of Psychiatry* 112, no. 7 (January 1956): 502–509.
- Cameron, Donald Ewen. "Psychic Driving: Dynamic Implant." *The Psychiatric Quarterly*, no. 31 (January 1957): 703–712.

- Cameron, Donald Ewen, and Leonard Levy, Leonard Rubenstein, R.B. Malmö. “Repetition of Verbal Signals: Behavioural and Physiological Changes.” *American Journal of Psychiatry* 115, no. 11 (1959): 985–991.
- Cameron, Donald Ewen, and Baruch Silverman. “Tale of Two Institutes.” *The American Journal of Psychiatry* 122, no. 2 (August 1965). McGill University Archives, MG 1098, 771, 38/220/1/12.
- Cameron, Donald Ewen. Untitled diagnosis of Rudolf Hess marked “SECRET.” nd. MG 1098 Rudolf Hess 1941–1971. McGill University Archives, MG 1098.
- Canetti, Elias. *Crowds and Power*. Translated by Carol Stewart. New York: Continuum, 1973.
- Canguilhem, Georges. *The Normal and the Pathological*. Translated by Carolyn R. Fawcett and Robert S. Cohen. New York: Zone Books, 1991.
- Cannon, Walter B. *The Wisdom of the Body*. New York: W. W. Norton, 1932.
- Carpo, Mario. *The Alphabet and the Algorithm*. Cambridge, MA and London: The MIT Press.
- Carey, James W. *Communication as Culture: Essays on Media and Society*, Revised Edition. New York: Routledge, 2008.
- Cartwright, Lisa, and Brian Goldfarb. “On the Subject of Neural and Sensory Prostheses.” In *The Prosthetic Impulse: From a Posthuman Present to a Biocultural Future*, edited by Maquard Smith and Joanne Morra, 125–154. Cambridge, MA and London: The MIT Press, 2006.
- Cashore, Harvey, and Lisa Ellenwood, Bob McKeown. “Trudeau government gag order in CIA brainwashing case silences victims, lawyer says.” *CBC News*, December 15, 2017. <https://www.cbc.ca/news/canada/canadian-government-gag-order-mk-ultra-1.4448933>.
- Cassin, Barbara, ed. *Dictionary of Untranslatables: A Philosophical Lexicon*. Princeton: Princeton University Press, 2017.
- Catania, A. Charles. “A Natural Science of Behavior.” *Review of General Psychology* 17, no. 2 (June 2013): 133–139. <https://doi.org/10.1037/a0033026>.
- James Chandler and Arnold I. Davidson, eds. “The Fate of Disciplines,” *Critical Inquiry* 35, no. 4 (Summer 2009).
- Choi, Bernard C.K. and Anita W.P. Pak. “Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness.” *Clinical and Investigative Medicine* 29, no. 6 (2006): 351–364.
- Chomsky, Noam. “Force and Opinion.” *Z Magazine* (July–August 1991). https://chomsky.info/199107_/.
- Chotikul, Diane. “The Soviet Theory of Reflexive Control in Historical and Psychocultural Perspective: A Preliminary Study.” Naval Postgraduate School, Monterey, CA. November 1984–July 1986. <https://apps.dtic.mil/sti/pdfs/ADA170613.pdf>.

- Chuh, Kandice. *The Difference Aesthetics Makes: On the Humanities "After Man."* Durham, NC: Duke University Press, 2019.
- Chul-Han, Byung. *Psychopolitics: Neoliberalism and New Technologies of Power.* Translated by Erik Butler. London and New York: Verso, 2017.
- Chun, Wendy Hui Kyong. *Control and Freedom: Power and Paranoia in the Age of Fiber Optics.* London and Cambridge, MA: The MIT Press, 2006.
- Chun, Wendy Hui Kyong. *Programmed Visions: Software and Memory.* Cambridge, MA and London: The MIT Press, 2011.
- Church of Scientology. "Glossary of Scientology & Dianetics Terms." *What Is Scientology?*, <https://www.whatisscientology.org/html/Part14/Chp50/pg1019-a.html>.
- Church of Scientology. "State of Clear." *What Is Scientology?* <https://www.whatisscientology.org/html/Part03/Chp13/pg0245.html>.
- CIA-foia rdp80B01676R001400110004-3. "Report of Inspection of MKULTRA." July 26, 1963. <https://publicintelligence.net/cia-ig-mkultra/>.
- Clark, Judith. "Roundtable on Prisons and Psychiatry: R.D. Laing, Howie Harp, Judy Clark, and Michel Foucault." In *Schizo-Culture: The Event*, edited by Sylvère Lotringer and David Morris, 167–181. South Pasadena, CA: Semiotext(e), 2013.
- Clark, Terry N., ed. *Gabriel Tarde: On Communication & Social Influence: Selected Papers.* London and Chicago: The University of Chicago Press, 2011.
- Clough, Patricia. "Control: A Conversation with Patricia Clough, Seb Franklin, and Jasbir Puar." The Center for the Humanities, CUNY Graduate Center, February 5, 2016, <https://www.centerforthehumanities.org/programming/control-a-conversation>.
- Collins, Anne. *In the Sleep Room: The Story of the CIA Brainwashing Experiments in Canada.* Toronto: Lester & Orpen Dennys, 1988.
- Conant, Theodore. *The Child of the Future: How Might He Learn?* [with Dr. Marshall McLuhan, Director, Centre for Culture and Technology, University of Toronto], NFB, 1964, 58 minutes. <https://www.nfb.ca/film/child-of-the-future-how-might-he-learn/>.
- Connolly, William E. *Neuropolitics: Thinking, Culture, Speed.* Minneapolis and London: University of Minnesota Press, 2002.
- Conway, Flo, and Jim Siegelman. *Dark Hero of the Information Age: In Search of Norbert Wiener, the Father of Cybernetics.* New York: Basic Books, 2004.
- Cooper, Paulette. "The Scientologist's Story." *The Scandal of Scientology* (1997). <https://www.xenu.net/archive/books/tsos/sos-app.html>; <https://www.xenu.net/archive/books/tsos/sos.html>.
- Copetas, Craig. "Beat Godfather: Bowie Meets Burroughs." In *Burroughs Live: The Collected Interviews of William S. Burroughs, 1960–1997*, edited by Sylvère Lotringer, 228–240. Los Angeles and New York: Semiotext(e), 2001.

- Crary, Jonathan. *24/7: Late Capitalism and the Ends of Sleep*. London and New York: Verso, 2014.
- Crary, Jonathan. "On the Ends of Sleep: Shadows in the Glare of a 24/7 World." Barcelona: MACBA, 2006.
- Crary, Jonathan. *Scorched Earth: Beyond the Digital Age to a Postcapitalist World*. London and New York: Verso, 2022.
- Crary, Jonathan. "Spectacle, Attention, Counter-Memory." *October* 50 (Autumn 1989): 96–107.
- Creelan, Paul. "Watson as Mythmaker: The Millenarian Sources of Watsonian Behaviorism." *Journal for the Scientific Study of Religion* 24, no. 2 (June 1985): 194–216.
- Critical Art Ensemble. "Introduction: Hidden Histories and Conspiratorial Narratives." In Kevin C. Pyle, *Lab U.S.A. Illuminated Documents*, 6–9. Brooklyn, Autonomedia, 2001.
- Curtis, Adam, dir. *Can't Get You Out of My Head*. 2021; London: British Broadcasting Corporation. Six-part documentary television series.
- Curtis, Adam, dir. *The Century of the Self*. 2002; London: British Broadcasting Corporation. Four-part documentary television series.
- Curtis, Adam, dir. *HyperNormalisation*. 2016; London: British Broadcasting Corporation. Feature-length documentary film.
- Czitrom, Daniel J. *Media and the American Mind: From Morse to McLuhan*. Chapel Hill: University of North Carolina Press, 1982.
- Damasio, Antonio R. *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: Avon Books, 1994.
- Damasio, Antonio R. *The Feeling of What Happens: Body, Emotion, and the Making of Consciousness*. London: Vintage, 2000.
- Dean, Jodi. *Publicity's Secret: How Technoculture Capitalizes on Democracy*. Ithaca and London: Cornell University Press, 2002.
- Dean, Jodi. "Why the Net is Not a Public Sphere," *Constellations* 10, no. 1 (2003): 95–112.
- Dear, Keith, Kevin Dutton and Elaine Fox. "Do 'watching eyes' influence antisocial behavior? A systemic review & meta-analysis." *Evolution and Human Behavior* 40, no. 3 (May 2019): 269–280.
- De Boever, Arne, Alex Murray, Jon Roffe, and Ashley Woodward, eds. *Gilbert Simondon: Being and Technology*. Edinburgh: Edinburgh University Press, 2012.
- De Kerckhove, Derrick. *The Skin of Culture: Investigating the New Electronic Reality*. Edited by Christopher Dewdney. London: Kogan Page, 1997/1995.
- Deleuze, Gilles. "Control and Becoming." *Negotiations, 1972–1990*, translated by Martin Joughin, 169–176. New York: Columbia University Press, 1995.

- Deleuze, Gilles. *Empiricism and Subjectivity: An Essay on Hume's Theory of Human Nature*. Translated by Constantin V. Boundas. New York: Columbia University Press, 1991.
- Deleuze, Gilles. *Foucault*. Translated by Seán Hand. Minneapolis: University of Minnesota Press, 1988.
- Deleuze, Gilles. "Having an Idea in Cinema [On the Cinema of Straub-Huillet]." In *Deleuze and Guattari: New Mappings in Politics, Philosophy and Culture*, edited by Eleanor Kaufman and Kevin Jon Heller, 14–19. Minneapolis: University of Minnesota Press, 1998.
- Deleuze, Gilles. *Nietzsche and Philosophy*. Translated by Hugh Tomlinson. New York: Columbia University Press, 2006/1983/1962.
- Deleuze, Gilles. "Politics." *Semiotext(e): Schizo-Culture* 3, no. 2 (1978): 154–163.
- Deleuze, Gilles. "Postscript on Control Societies." In *Negotiations, 1972–1990*, translated by Martin Joughin, 177–182. New York: Columbia University Press, 1995.
- Deleuze, Gilles. "Postscript on the Societies of Control." *October* 59 (Winter 1992): 3–7.
- Deleuze, Gilles. "Qu'est-ce qu'un acte de creation?" ["What is the Creative Act?"]. Lecture given as part of the "Tuesdays of the [FEMIS] Foundation," March 17, 1987. https://www.youtube.com/watch?v=a_hifamdISs.
- Deleuze, Gilles, and Félix Guattari. *Anti-Oedipus: Capitalism and Schizophrenia*. Translated by Robert Hurley, Mark Seem, Helen R. Lane. Minneapolis and London: University of Minnesota Press, 1983.
- Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. Minneapolis and London: University of Minnesota Press, 2005/1987.
- Deleuze, Gilles, and Félix Guattari. *What Is Philosophy?* Translated by Hugh Tomlinson and Graham Burchell. New York: Columbia University Press, 1994.
- Denzin, Norman K. and Yvonna S. Lincoln, eds. "Introduction: The Discipline and Practice of Qualitative Research." In *The SAGE Handbook of Qualitative Research*. Thousand Oaks, London, New Delhi, Singapore: SAGE, 2005.
- Dewey, John. *Problems of Men*. New York: Philosophical Library, 1946.
- DiClemente, Diane, and Donald A. Hantula. "John Broadus Watson, I-O Psychologist." *The Industrial-Organizational Psychologist* 37, no. 4 (April 2000). <http://www.siop.org/tip/backissues/TipApril00/7Diclemente.aspx>.
- Didion, Joan. "Wired for Shock Treatments: A Review of William S. Burroughs, *The Soft Machine* (1966)." *Bookweek*, March 27, 1966. <https://beatpatrol.wordpress.com/2009/02/26/william-s-burroughs-the-soft-machine-1966-2/>.
- Dolling, Irene and Sabine Hark. "She Who Speaks Shadow Speaks Truth: Transdisciplinarity in Women's and Gender Studies." *Signs* 25, no. 4 (Summer 2000): 1195–1198.

- Dolphijn, Rick, and Iris van der Tuin. *New Materialism: Interviews & Cartographies*. Open Humanities Press, 2012. <https://library.oapen.org/handle/20.500.12657/33904>.
- Dostoyevsky, Fyodor. *Notes from the Underground* (1996/1864). <https://www.gutenberg.org/cache/epub/600/pg600-images.html>.
- Dreyfus, Hubert L. *On the Internet*. London and New York: Routledge 2001.
- Dreyfus, Hubert L. and Paul Rabinow. *Michel Foucault: Beyond Structuralism and Hermeneutics*, Second Edition. Chicago: The University of Chicago Press, 1983.
- Eichhorn, Kate. *The End of Forgetting: Growing Up with Social Media*. Cambridge, MA and London: Harvard University Press, 2019.
- Elmer, Greg, and Matthew Tiessen, eds. "Editorial Introduction for *Deleuze / Foucault: A Neoliberal Diagram*. *Neoliberal Diagrammatics and Digital Control*." *MediaTropes* 4, no. 1 (2013): i–xvi.
- Emirbayer, Mustafa, and Mimi Sheller. "Publics in History." *Theory and Society* 28, no. 1 (February 1999): 145–197.
- Epstein, Nadine. "Et Voila! Le Minitel." *New York Times Magazine*, March 9, 1986. <https://www.nytimes.com/1986/03/09/magazine/et-voila-le-minitel.html>.
- Eren, Colleen. "Facebook Death," *vitam fracta*, February 27, 2018. <https://vitamfracta.com/2018/02/27/facebook-death/>.
- Ericsson, Kjersti and Eva Simonsen, eds. *Children of World War II: The Hidden Enemy Legacy*. New York: Berg Publishers, 2005.
- Erickson, Paul, Judy L. Klein, Lorraine Daston, Rebecca Lemov, Thomas Sturm, and Michael D. Gordin. *How Reason Almost Lost Its Mind: The Strange Career of Cold War Rationality*. Chicago and London: The University of Chicago Press, 2013.
- Ervin, Lazslo. *The Interconnected Universe: The Conceptual Foundations of Transdisciplinary Unified Theory*. Singapore, New Jersey, London, Hong Kong: World Scientific, 1995.
- Eubanks, Virginia. *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*. New York: St. Martin's Press, 2017.
- Felman, Shoshana. "Psychoanalysis and Education: Teaching Terminable and Interminable." *Yale French Studies* 63, *The Pedagogical Imperative: Teaching as a Literary Genre* (1982): 21–44.
- Felski, Rita. *Beyond Feminist Aesthetics*. Cambridge, MA: Harvard University Press, 1989.
- Feyerabend, Paul. *Against Method: Outline of an Anarchistic Theory of Knowledge*. London and New York: Verso, 1993.
- Fine, Robert. "Psychiatry and Materialism, Q&A with Francois Peraldi et al." In *Schizo-Culture: The Event*, edited by Sylvère Lotringer and David Morris, 127–143. South Pasadena, CA: Semiotext(e), 2013.

- Fish, Stanley. "Being Interdisciplinary Is So Very Hard to Do." *Issues in Integrative Studies* 9 (1991/1989): 99–112.
- Fisher, Mark. *Capitalist Realism: Is There No Alternative?* Hants: 0 Books, 2009.
- Fodor, Janet Dean. "Psycholinguistics Cannot Escape Prosody." Proceedings on the 1st International Conference on Speech Prosody, Aix-en-Provence, France, April 11–13, 2002.
- Foster, Russell. "In 2019, cultural divides between science and art will cease to exist." *Wired*, January 13, 2019, <https://www.wired.co.uk/article/art-science-cultural-divide>.
- Foucault, Michel. *Discipline and Punish: The Birth of the Prison*. Translated by Alan Sheridan. New York: Vintage Books, 1995.
- Foucault, Michel. "The Eye of Power." Translated by Mark Seem. *Semiotext(e)*, Vol. 3, No. 2 (1978): 6–19.
- Foucault, Michel. "Governmentality." In Michel Foucault, *Power—The Essential Works of Foucault 1954–1984*, Volume Three. Edited by James D. Faubion, translated by Robert Hurley and others. New York: The New Press, 2000.
- Foucault, Michel. *The History of Sexuality, Volume 1: An Introduction*. Translated by Robert Hurley. New York: Pantheon Books, 1978.
- Foucault, Michel. *Power/Knowledge: Select Interviews and Other Writings, 1972–1977*. Translated by Colin Gordon, Leo Marshall, John Mepham, and Kate Soper. New York: Pantheon Books, 1980.
- Foucault, Michel. "Self-Writing" (1983). In *Ethics: Subjectivity and Truth—The Essential Works of Foucault 1954–1984*, Volume 1, edited by Paul Rabinow, translated by Robert Hurley and others, 210–211. New York: The New Press, 1997.
- Foucault, Michel. "*Society Must Be Defended*": *Lectures at the Collège de France, 1975–76*. Edited by Mauro Bertani and Alessandro Fontana, translated by David Macey. New York: Picador, 2003/1997/1976.
- Foucault, Michel. "We Are Not Repressed." In *Schizo-Culture: The Event*, edited by Sylvère Lotringer and David Morris, 146–147. South Pasadena, CA: Semiotext(e), 2013.
- Foucault, Michel. "What is an Author?" (1969). In *Aesthetics, Method, and Epistemology—The Essential Works of Foucault 1954–1984*, Volume Two. Edited by James D. Faubion, translated by Robert Hurley and others. New York: The New Press, 1998.
- Foucault, Michel. "What is an Author?" (1969). In *Language, Counter-Memory, Practice: Selected Essays and Interviews by Michel Foucault*. Translated by Donald Bouchard and Sherry Simon, edited by Donald Bouchard, 113–138. Ithaca: Yale University Press, 1977.
- Fox, Richard Wrightman, and T. J. Jackson Lears, eds. *The Culture of Consumption: Critical Essays in American History, 1880–1980*. New York: Pantheon/Random House, 1983.
- Fraser, Nancy. "Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy." *Social Text* 25/26 (1992): 56–80.

- Friesen, Milton. "Glorious Adaptation: Institutions that are Future Ready," August 24, 2012. <https://convivium.ca/articles/glorious-adaptation-institutions-that-are-future-ready>.
- Fuller, R. Buckminster. "R. Buckminster Fuller on Education" (1980). <https://soundcloud.com/dymaxionlibrary/rbf1980-lecture-college-educationandworld>.
- Gabor, Dennis. *Inventing the Future*. New York: Alfred A. Knopf, 1964.
- Galison, Peter. "The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision." *Critical Inquiry* 21 (Autumn 1994): 228–266.
- Galloway, Alexander R. "The Cybernetic Hypothesis." *Differences: A Journal of Feminist Cultural Studies* 25, no. 1 (Fall 2014): 107–131. <https://doi.org/10.1215/10407391-3142368>.
- Galloway, Alexander R. and Eugene Thacker. *The Exploit: A Theory of Networks*. Minneapolis and London: University of Minnesota Press, 2007.
- Gardner, John William. *Self-Renewal: The Individual and the Innovative Society*. Brattleboro, VT: Echo Point Books & Media, 1963.
- Genosko, Gary. *Félix Guattari: An Aberrant Introduction*. London and New York: Continuum, 2002.
- Genosko, Gary. "Félix Guattari: Towards a Transdisciplinary Metamethodology." *Angelaki: Journal of the Theoretical Humanities* 8, no. 1 (April 2003): 129–140.
- Geoghegan, Bernard. "The Family as Machine: Film, Infrastructure, and Cybernetic Kinship in Suburban America," *Grey Room* 66 (2017): 70–101.
- Gerovitch, Slava. *From Newspeak to Cyberspeak: A History of Soviet Cybernetics*. Cambridge, MA and London: The MIT Press, 2002.
- Gerovitch, Slava. "Love-Hate for Man-Machine Metaphors in Soviet Physiology: From Pavlov to 'Physiological Cybernetics.'" *Science in Context* 15, no. 2 (June 2002): 339–374.
- Gibbons, Michael, Camille Limoges, Helga Nowotny, Simon Schwartzman, Peter Scott, and Martin Trow. *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. Los Angeles, London, New Delhi, Singapore, and Washington DC: SAGE Publications, 1994.
- Gillmor, Don. *I Swear by Apollo: Dr. Ewen Cameron and the CIA-Brainwashing Experiments*. Montreal: Eden Press, 1987.
- Ginsberg, Allen. "In Search of Yage: Interview with Charles Ruas" (1975). In *Burroughs Live: The Collected Interviews of William S. Burroughs, 1960–1997*, edited by Sylvère Lotringer, 23–32. Los Angeles and New York: Semiotext(e), 2001.
- Ginsberg, Allen. "William Burroughs' Proclamation – (Do Easy)." The Allen Ginsberg Project, July 30, 2015. <https://allenginsberg.org/2015/07/william-burroughs-proclamation-do-easy/>.

- Ginsberg, Allen, and Gregory Corso. "The Time-Birth-Death Gimmick." In *Burroughs Live: The Collected Interviews of William S. Burroughs, 1960–1997*, edited by Sylvère Lotringer, 42–46. Los Angeles and New York: Semiotext(e), 2001.
- Girdner, Dr. John Harvey. *Newyorkitis*. New York: The Grafton Press, 1901.
- Goldstein, David S. *Adrenaline and the Inner World: An Introduction to Scientific Integrative Medicine*. Baltimore: The Johns Hopkins University Press, 2006.
- Graeber, David. *The Utopia of Rules: On Technology, Stupidity, and the Secret Joys of Bureaucracy*. Brooklyn and London: Melville House, 2015.
- Graeber, David, Stephen Shukaitis, and Erika Biddle, eds. *Constituent Imagination: Militant Investigations // Collective Theorization*. Oakland, Edinburgh, West Virginia: AK Press, 2007.
- Gray, Kathelin. "William S. Burroughs and the Biosphere, 1974–1997." *LA Review of Books*, May 20, 2018. <https://lareviewofbooks.org/article/william-s-burroughs-and-the-biosphere-1974-1997>.
- Green, Travis. "Algorithmic Behavior Modification by Big Tech is Crippling Academic Data Science Research." *Towards Data Science*, April 18, 2022. <https://towardsdatascience.com/algorithmic-behavior-modification-by-big-tech-is-crippling-academic-data-science-research-c600d4fe696b>.
- Griffin, Eddie. "Breaking Men's Minds: Behavior Control and Human Experimentation at the Federal Prison in Marion, Illinois." *Journal of Prisoners on Prisons* 4, no. 2 (1993): 17–28. <https://uottawa.scholarsportal.info/ottawa/index.php/jpp/article/view/5476/4542>.
- Griziotti, Giorgio. *Neurocapitalism: Technological Mediation and Vanishing Lines*. Colchester/New York/Port Watson: Minor Compositions, 2019.
- Grosz, Elizabeth. "Habit Today: Ravaisson, Bergson, Deleuze and Us." *Body & Society* 19, no. 2 & 3 (2013): 217–239.
- Grosz, Elizabeth. "A politics of imperceptibility: A response to 'anti-racism, multiculturalism and the ethics of identification.'" *Philosophy and Social Criticism* 28, no. 4 (2002): 463–472.
- Guattari, Félix. *Chaosmosis: An Ethico-Aesthetic Paradigm*. Translated by Paul Bains and Julian Pefanis. Bloomington and Indianapolis: Indiana University Press, 1995.
- Guattari, Félix. *The Machinic Unconscious: Essays in Schizoanalysis*. Translated by Taylor Adkins. Los Angeles: Semiotext(e), 2011/1979.
- Guattari, Félix. "Molecular Revolutions and Q&A." In *Schizo-Culture: The Event*, edited by Sylvère Lotringer and David Morris, 184–195. South Pasadena, CA: Semiotext(e), 2013.
- Guattari, Félix. "Notes on Power and Meaning." In *Schizo-Culture: The Event*, edited by Sylvère Lotringer and David Morris, 182–184. South Pasadena: Semiotext(e), 2013.
- Guattari, Félix. "Pragmatic/Machinic: A Discussion with Guattari." Conducted, transcribed, and translated by Charles J. Stivale, March 19, 1985,

http://topologicalmedialab.net/xinwei/classes/readings/Guattari/Pragmatic-Machinic_chat.html.

- Guattari, Félix. *Psychoanalysis and Transversality: Texts and Interviews, 1955–1971*. Translated by Ames Hodges. Los Angeles: Semiotext(e), 2015.
- Guattari, Félix. *The Three Ecologies*. Translated by Ian Pindar and Paul Sutton. London and New Brunswick, NJ: The Athlone Press, 2000/1989.
- Guattari, Félix. “Transdisciplinarity Must Become Transversality.” Translated by Andrew Goffey. Special issue “Transdisciplinary Problematics” in *Theory, Culture & Society* 32, no. 5–6 (2015): 131–137.
- Guilbeault, Douglas, Joshua Becker, and Damon Centola. “Complex Contagions: A Decade in Review” (2018). In *Complex Spreading Phenomena in Social Systems*. Edited by Sune Lehmann and Yong-Yeol Ahn. Springer Nature: forthcoming.
<https://socialcontagionbook.github.io>.
- Guttorm, Hanna, Riikka Hohti, and Antti Paakkari. “‘Do the next thing’: An interview with Elizabeth Adams St. Pierre on post-qualitative methodology.” *Reconceptualizing Educational Research Methodology* 6, no. 1 (2015): 15–22.
<https://doi.org/10.7577/rem.1421>.
- Habermas, Jürgen. “For A Democratic Polarisation: How to Pull the Ground from Under Right-Wing Populism.” *Social Europe*, November 17, 2016.
<https://www.socialeurope.eu/democratic-polarisation-pull-ground-right-wing-populism>.
- Habermas, Jürgen. *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*. Translated by Thomas Burger with Frederick Lawrence. Cambridge, MA: The MIT Press, 1991.
- Hadorn, Gertrude Hirsch, Holger Hoffmann-Riem, Susette Biber-Klemm, Walter Grossenbacher-Mansuy, Dominique Joye, Christian Pohl, Urs Wiessmann, and Elisabeth Kemp, eds. *Handbook of Transdisciplinary Research*. Zurich: Springer, 2008.
- Haidt, Jonathan. “Yes, Social Media Really is Undermining Democracy.” *Atlantic*, July 8, 2022. <https://www.theatlantic.com/ideas/archive/2022/07/social-media-harm-facebook-meta-response/670975/>.
- Hale, Jr., Matthew. *Human Science and Social Order: Hugo Münsterberg and the Origins of Applied Psychology*. Philadelphia: Temple University Press, 1980.
- Halpern, Orit. *Beautiful Data: A History of Vision and Reason since 1945*. Durham and London: Duke University Press, 2014.
- Haraway, Donna J. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge, 1991.
- Harrison, John F.C. “Review: Education in Victorian England.” *History of Education Quarterly* 10, no. 4 (Winter 1970): 485–491.
- Harsin, Jayson. “Attention! Rumor Bombs, Affect, and Managed Democracy.” In *Propaganda and Rhetoric in Democracy: History, Theory, Analysis*, edited by Gae Lyn

- Henderson and M.J. Braun, 202–222. Carbondale: Southern Illinois University Press, 2016.
- Hartley, Mariette, and Anne Commire. *Breaking the Silence*. New York: G. P. Putnam's Sons, 1990.
- Harvey, Olivia. "Marshall McLuhan on Technology, Subjectivity and 'the Sex Organs of the Machine World.'" *Continuum: Journal of Media & Cultural Studies* 20, no. 3 (September 2006): 331–334.
- Hassard, John, and Michael Rowlinson. "Researching Foucault's Research: Organization and Control in Joseph Lancaster's Monitorial Schools." *Organization* 9, no. 4 (November 1, 2002): 615–639.
- Hasse, Stina. "I am Sitting in a Room." *Body, Space & Technology* 11 (2012).
<http://doi.org/10.16995/bst.71>.
- Hauptmann, Deborah, and Warren Neidich, eds. *Cognitive Architecture: From Biopolitics to Noopolitics. Architecture & Mind in the Age of Communication and Information*. Rotterdam: 010 Publishers, 2010.
- Hayward, Rhodri, "The Tortoise and the Love Machine: Grey Walter and the Politics of Electroencephalography." *Science in Context* 14, no. 4 (2001): 615–641.
- Hearn, Alison. "Interdisciplinarity / Extradisciplinarity: On the University and the Active Pursuit of Community." *History of Intellectual Culture* 3, no. 1 (2003).
<https://journalhosting.ucalgary.ca/index.php/hic/article/view/68804/53304>.
- Hebdige, Dick. "Subculture: The Meaning of Style" (1979). In *The Subcultures Reader*, edited by Ken Gelder and Sarah Thornton, 130–142. New York and London: Routledge, 1997.
- Heims, Steve Joshua. *The Cybernetics Group*. Cambridge, MA and London: The MIT Press, 1991.
- Heims, Steve Joshua. "Introduction." In Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society*, xvii–xix. London: Free Association Books, 1989.
- Hofstadter, Richard. "The Paranoid Style in American Politics." *Harpers Magazine* (November 1964). <https://harpers.org/archive/1964/11/the-paranoid-style-in-american-politics/>.
- Hogan, David. "The Market Revolution and Disciplinary Power: Joseph Lancaster and the Psychology of the Early Classroom System." *Education Quarterly* 29, no. 3 (Autumn 1989): 381–417.
- Holmes, Brian. "Network Maps, Energy Diagrams: Structure and Agency in the Global System." *Continental Drift* [blog], April 27, 2007.
<https://brianholmes.wordpress.com/2007/04/27/network-maps-energy-diagrams/>.
- Holmes, Brian. "Society of Control: The Neoliberal Civilization." European Graduate School Video Lectures, December 8, 2011.
<https://www.youtube.com/watch?v=HwDR9HLBIJU>.

- Horwitz, Allan V. "How an Age of Anxiety Became an Age of Depression." *Milbank Quarterly* 88, no. 1 (March 2010): 112–138.
- Hubbard, L. Ron. *Dianetics: The Modern Science of Mental Health*. Commerce, CA: Bridge Publications, 2007/1950.
- Hubbard, L. Ron. "World Exclusive: L. Ron Hubbard Breaks Silence, A Reply to William Burroughs." *Mayfair* 5, no. 6 (August 1970): 2–6.
- Hui, Yuk. "ChatGPT, or the Eschatology of Machines." *e-flux Journal* 137 (June 2023). <https://www.e-flux.com/journal/137/544816/chatgpt-or-the-eschatology-of-machines/>.
- Huxley, Aldous. *Brave New World Revisited*. New York: Harper & Brothers, 1958. https://archive.org/details/Brave_New_World_Revisited.
- Huxley, Aldous. *Brave New World Revisited*. New York: Harper Perennial Modern Classics, 2006/1958.
- Huxley, Aldous. *Brave New World + Brave New World Revisited*. Toronto: Vintage Canada, 2007.
- Huxley, Aldous. "The Ultimate Revolution." Speech delivered at Berkeley Language Center, UC Berkeley, March 20, 1962. <https://publicintelligence.net/aldous-huxley-1962-u-c-berkeley-speech-on-the-ultimate-revolution/>.
- Hyman, Ira E. "The Menace of Memes." *Psychology Today*, October 31, 2019. <https://www.psychologytoday.com/us/blog/mental-mishaps/201910/the-menace-memes>.
- Immordino-Yang, Mary Helen, and Antonio Damasio. "We Feel, Therefore We Learn: The Relevance of Affective and Social Neuroscience to Education." *Mind, Brain, and Education* 1, no. 1 (March 2007): 3–10. <https://doi.org/10.1111/j.1751-228X.2007.00004.x>.
- Institute for Precarious Consciousness. "Anxiety, affective struggle, and precarity consciousness raising." *Interface Journal* 6, no. 2 (November 2014): 271–300. http://www.interfacejournal.net/wordpress/wp-content/uploads/2015/01/Issue-6_2-IPC.pdf.
- Invisible Committee. *To Our Friends* (2014). Translated by Robert Hurley. South Pasadena: Semiotext(e), 2015.
- Itzkin, Elissa S. "Bentham's Chrestomathia: Utilitarian Legacy to English Education." *Journal of the History of Ideas* 39, no. 2 (April–June 1978): 303–316.
- Ivain, Gilles [Ctcheglov]. "Formulary for a New Urbanism" (1953). This translation is from *Situationist International Online*, translated by Kenn Knabb. <https://www.cddc.vt.edu/sionline/presitu/formulary.html>. The original was published in *Internationale Situationniste* #1 (October 1953).
- Jacobi, Daniel and Jason Luckerhoff, eds. *Looking for Non-Publics*. Quebec City: Presses de l'Université du Québec, 2012.
- James, William. "A Plea for Psychology as a 'Natural Science.'" *Philosophical Review* 1, no. 2 (March 1892): 146–153.

- James, William. *The Principles of Psychology*, Vol. 1 (New York: Henry Holt and Company, 1918), 105. <https://www.gutenberg.org/cache/epub/57628/pg57628-images.html>.
- James, William. "Habit." In *The Principles of Psychology* (1890). <https://psychclassics.yorku.ca/James/Principles/prin4.htm>.
- Jameson, Frederic. *Postmodernism, Or the Cultural Logic of Late Capitalism*. Durham, NC: Duke University Press, 1991.
- Jantsch, Erich. "Integrative Planning for the 'Joint Systems' of Society and Technology—The Emerging Role of the University." Report produced for the U.S. Department of Health, Education & Welfare, Office of Education, Cambridge, Massachusetts, May 1969.
- Jantsch, Erich. "Intra- and Transdisciplinary University: A Systems Approach to Education and Innovation." *Policy Sciences* 1, no. 4 (Winter 1970): 403–428.
- Jantsch, Erich. "Perspectives of Planning." Proceedings of the OECD Working Symposium on Long-Range Forecasting and Planning, Bellagio, Italy, October 27–November 2, 1968.
- Jeffries, Stuart. "A rare interview with Jurgen Habermas." *Financial Times*, April 30, 2010. <https://www.ft.com/content/eda3bcd8-5327-11df-813e-00144feab49a>.
- Jo, Alice. "Maintenance and Care During and Beyond the Pandemic: An Interview with Shannon Mattern." *Brown Political Review*, April 9, 2021. <https://brownpoliticalreview.org/2021/04/maintenance-and-care-during-and-beyond-the-pandemic-bpr-interviews-shannon-mattern/>.
- Joint Hearing Before the Select Committee on Intelligence and the Subcommittee on Health and Scientific Research of the Committee on Human Resources. United States Senate, Ninety-Fifth Congress, First Session, August 3, 1977. <https://www.intelligence.senate.gov/sites/default/files/hearings/95mkultra.pdf>.
- Jones, Jonathan S. "Opium Slavery: Civil War Veterans and Opiate Addiction." *The Journal of the Civil War Era* 10, no. 2 (June 2020): 185–212.
- Jones, Susan S. "The development of imitation in infancy." *Philosophical Transactions of the Royal Society B Biological Sciences* 364, no. 1528 (August 2009). 10.1098/rstb.2009.0045.
- Joseph, Martha. "Collecting Alvin Lucier's *I Am Sitting in a Room*." *MoMA Inside/Out*, January 20, 2015. https://www.moma.org/explore/inside_out/2015/01/20/collecting-alvin-luciers-i-am-sitting-in-a-room/.
- Kahn, Robert, and Peter Wagschal, eds. *R. Buckminster Fuller on Education*. Amherst: University of Massachusetts Press, 1979.
- Kamberelis, George, and Greg Dimitriadis. "Focus Groups: Strategic Articulations of Pedagogy, Politics, and Inquiry." In *The SAGE Handbook of Qualitative Research*, Fourth Edition, edited by Norman K. Denzin and Yvonna S. Lincoln, 887–907. Los Angeles, London, New Delhi, Singapore, and Washington DC: SAGE Publications, 2011.

- Karppi, Tero. "Disconnect.Me: User Engagement and Facebook." PhD dissertation, Department of Media Studies, University of Turku, Turku, 2014.
<https://www.utupub.fi/bitstream/handle/10024/95616/AnnalesB376Karppi.pdf?sequence=2&isAllowed=y>.
- Karppi, Tero, Lotta Kähkönen, Mona Mannevu, Mari Pajala, and Tanja Sihvonen. "Affective capitalism: Investments and investigations." *ephemera: theory and politics in organization* 16, no. 4—Affective capitalism special issue (November 2016): 1–13.
<https://ephemerajournal.org/index.php/contribution/affective-capitalism-investments-and-investigations>.
- Katz, Elihu. "Rediscovering Gabriel Tarde" *Political Communication*, no. 3 (2006): 263–270.
- Katz, Elihu, and Daniel Dayan. "Preface." In *Looking for Non-Publics*, edited by Daniel Jacobi and Jason Luckerhoff, vii–xv. Quebec City: Presses de l'Université du Québec, 2012.
- Kerasovitis, Konstantinos. "Post Qualitative Research—Reality through the Antihierarchical Assemblage of non-Calculation." *The Qualitative Report* 25, no. 13 (2020): 56–70.
- Ketchum, James S. *Chemical Warfare Secrets Almost Forgotten: A Personal Story of Medical Testing of Army Volunteers with Incapacitating Chemical Agents During the Cold War, 1955–1975*. Santa Rosa, CA: ChemBooks Inc., 2006.
- Kidd, Ian James. "What's So Great about Feyerabend? Against Method, Forty Years On." *Metascience* 24, no. 3: 343–349.
- Kierkegaard, Søren. *Christian Discourses*. Translated by Walter Lowrie. Princeton: Princeton University Press, 1971.
- Kierkegaard, Søren. *Concluding Unscientific Postscript*. Translated by Walter Lowrie and Joseph Campbell. Princeton: Princeton University Press, 1974.
- Kierkegaard, Søren. *The Journals of Kierkegaard*. Edited and translated by Alexander Dru. New York: Harper Torchbooks, 1959/1835.
- Kierkegaard, Søren. *Two Ages: The Age of Revolution and the Present Age, A Literary Review*. Edited and translated by Howard V. Hong and Edna Hong. Princeton: Princeton University Press, 1978.
- Kirkland, Tabitha and William A. Cunningham. "Neural basis of affect and emotion." *WIREs Cognitive Science*, Vol. 2 (November/December 2011): 656–665.
- Klein, Naomi. *The Shock Doctrine: The Rise of Disaster Capitalism*. New York: Metropolitan Books, 2007.
- Klein, Julie Thompson. "Discourses of Transdisciplinarity: Looking Back to the Future." *Futures* 63 (2014): 68–74.
- Kline, Ronald R. *The Cybernetics Moment: Or Why We Call Our Age the Information Age*. Baltimore: Johns Hopkins University Press, 2015.

- Konstantinou, Lee. “William S. Burroughs’ Wild Ride with Scientology.” *Gizmodo*, May 11, 2011. <https://gizmodo.com/william-s-burroughs-wild-ride-with-scientology-5800673>.
- Kort, Pamela. “Beuys: The Profile of a Successor,” 2001, quoted in David Levi Strauss, “In Case Something Different Happens in the Future: Joseph Beuys and 9/11,” *The Brooklyn Rail*, September 5, 2011. <http://brooklynrail.org/2011/09/art/in-case-something-different-happens-in-the-futurejoseph-beuys-and-911>.
- Korzybski, Alfred. *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics*. New York: Institute for General Semantics, 1994/1933.
- Kraus, Karl. *The Last Days of Mankind: The Complete Text*. Translated by Fred Bridgham and Edward Timms. New Haven: Yale University Press, 2015.
- Kreshel, Peggy J. “John B. Watson at J. Walter Thompson: The Legitimation of ‘Science’ in Advertising.” *Journal of Advertising* 19, no. 2 (1990): 49–59.
- Kurzweil, Ray. “Escapism with VR: Digital Fantasy as a Shield from Stark Reality.” *ArviVR*, June 26, 2020. <https://vr.arvilab.com/blog/escapism-vr/>.
- Laats, Adam. “Joseph Lancaster: I Love You but You’re Going to Hell.” *I Love You but You’re Going to Hell: Awkward Conversations about School and Society*, January 29, 2019. <https://iloveyoubutyouregoingtohell.org/tag/joseph-lancaster/>.
- LaFrance, Adrienne. “Facebook Is a Doomsday Machine.” *The Atlantic*, December 15, 2012. <https://www.theatlantic.com/technology/archive/2020/12/facebook-doomsday-machine/617384/>.
- Lancaster, Joseph. *The British System of Education: Being a Complete Epitome of the Improvements and Inventions Practised at the Royal Free Schools, Boroughroad, Southwark* (1810). <https://ia800701.us.archive.org/8/items/britishsystemed00lancgoog/britishsystemed00lancgoog.pdf>.
- Lancaster, Joseph. *Improvements in Education as it Respects the Industrious Classes of the Community*” (1805). <http://www.constitution.org/lanc/improvements.htm>.
- Lancaster, Joseph. *Improvements in Education as it Respects the Industrious Classes of the Community*, 2nd ed. London: Darton and Harvey, 1803. https://www.google.ca/books/edition/Improvements_in_education_as_it_respects/d-hbAAAAQAAJ?hl=en&gbpv=1.
- Lancaster, Joseph. *A Manual of the System of Discipline & Instruction for the Schools of the Public School Society of New-York* (1850).
- Land, Christopher. “Apomorphine Silence: Cutting-up Burroughs’ Theory of Language and Control.” *ephemera: theory & politics in organization* 5, no. 3 (2005): 450–471.
- Land, Nick. *The Dark Enlightenment* (2012). <https://www.thedarkenlightenment.com/the-dark-enlightenment-by-nick-land/>.
- Laporte, Dominique. *The History of Shit*. Translated by Rodolphe el-Khoury. Cambridge, MA and London: The MIT Press, 2000.

- Lardner, Dionysus. “Babbage’s Calculating Engine.” *Edinburgh Review* 59 (1834). Reprinted *The Works of Charles Babbage*, Vol. 2 [11 Vols.], edited by Martin Campbell-Kelly, 263–327. London: William Pickering, 1989.
- Latour, Bruno. “Tarde’s idea of quantification.” In *The Social after Gabriel Tarde: Debates and Assessments*, edited by Matei Candea, 145–162. London: Routledge, 2010.
- Lawrence, Roderick J. “Advances in Transdisciplinarity 2004–2014.” *Futures* 65 (January 2015).
- Lazzarato, Maurizio. “Does Cognitive Capitalism Exist?” In *The Psychopathologies of Cognitive Capitalism: Part Two*, edited by Warren Neidich, 93–112. Berlin: Archive Books, 2013.
- Lazzarato, Maurizio. “Life and Living in the Societies of Control.” In *Deleuze and the Social*, edited by Martin Fulsgang and Bent Meier Sørensen, 171–190. Edinburgh: Edinburgh University Press, 2006.
- Lazzarato, Maurizio. “‘Semiotic Pluralism’ and the New Government of Signs: Homage to Félix Guattari.” Translated by Mary O’Neill. *Transversal* (June 2006). <https://transversal.at/transversal/0107/lazzarato/en>.
- Leach, John. “Psychological factors in exceptional, extreme and torturous environments.” *Extreme Physiology and Medicine* 5 (June 1, 2016). <https://extremephysiolmed.biomedcentral.com/articles/10.1186/s13728-016-0048-y>.
- Leary, Timothy. *The Intelligence Agents*. Berkeley: RONIN Publishing, 1979.
- Leary, Timothy. *The Intelligence Agents*, 3rd edition. Berkeley: RONIN Publishing, 2014.
- Leary, Timothy, with Robert Anton Wilson and George A. Koopman. *Neuropolitics: The Sociobiology of Human Metamorphosis*. Los Angeles, CA: Starseed/Peace Press Publication, 1977.
- Le Bon, Gustave. *The Crowd: A Study of the Popular Mind* (1896). Translated by np. Kitchener: Batoche Books, 2001.
- Lederer, Norman. “Joseph Lancaster and the Monitorial School Movement: A Documentary History.” *Quaker History* 64, no. 2 (Autumn 1975): 128–129.
- Lefebvre, Henri. *The Production of Space*. Translated by Donald Nicholson-Smith. Oxford, UK and Cambridge, MA: Blackwell, 1991.
- Lefebvre, Henri. *Rhythmanalysis: Space, Time, and Everyday Life*. Translated by Stuart Elden and Gerald Moore. London and New York: Continuum, 2004.
- Lemov, Rebecca. “Brainwashing’s Avatar: The Curious Career of D. Ewen Cameron.” *Grey Room* 45 (Fall 2011): 60–87.
- Lemov, Rebecca. *World as Laboratory: Experiments with Mice, Mazes, and Men*. New York: Farrar, Straus and Giroux, 2006.
- Lévi-Strauss, Claude. *The Savage Mind*. Translated by George Weidenfeld and Nicolson Ltd. London: Weidenfeld and Nicolson, 1966.

- Lewis, Wyndham. *Blasting and Bombardiering*. Berkeley: University of California Press, 1967.
- Lincoln, Yvonna S. and Egon G. Guba. *Naturalistic Inquiry*. Newbury Park, London, New Delhi: SAGE Publications, 1985.
- Linshii, Jack. "A Day in the Life." *TIME*, September 22, 2014. <https://time.com/3326571/a-day-in-the-life/>.
- Lloyd, David. *Under Representation: The Racial Regime of Aesthetics*. New York: Fordham University Press, 2019.
- Lockett, William. "Cybernetic Child Psychology: A Genealogy of the User." PhD dissertation, Department of Media, Culture, and Communication, Steinhardt School of Culture, Education and Human Development, New York University, 2019. https://media.proquest.com/media/hms/PFT/2/fbqqB?_s=Q2F3Y6hRdZvGladnbFWm2p0FM0s%3D.
- Lotringer, Sylvère. "Anti-Oedipus: From Psychoanalysis to Schizopolitics." *Semiotext(e)* 11, no. 3 (1977).
- Lotringer, Sylvère, ed. *Schizo-Culture: The Book*. South Pasadena, CA: Semiotext(e), 2013.
- Lotringer, Sylvère. *Schizo-Culture: The Event*, edited by Sylvère Lotringer and David Morris. South Pasadena, CA: Semiotext(e), 2013.
- Lovink, Geert. "MyBrain.net: The Colonization of Real-Time and Other Trends in Web 2.0." *Eurozine*, March 8, 2010. <http://www.eurozine.com/articles/2010-03-18-lovink-en.html>.
- Lucier, Alvin and Douglas Simon, *Chambers*. Middletown, CT: Wesleyan University Press, 1980.
- Lucier, Alvin. *I Am Sitting in a Room* (Preliminary Version). 1969; Electronic Music Studio, Brandeis University, Waltham, MA. <https://www.youtube.com/watch?v=g8U0b8Trhjc>.
- Lucier, Alvin. *I Am Sitting in a Room*. 1981/1990; Lovely Music, Ltd. LP/CD.
- Lünenborg, Margreth. "Affective publics." In *Affective Societies: Key Concepts*, edited by Jan Slaby and Christian von Scheve, 319–329. Milton Park, Abingdon/New York: Routledge, 2019.
- Lupton, Deborah. "Data Mattering and Self-Tracking: What Can Personal Data Do?" *Journal of Media and Cultural Studies* 34, no. 1 (2020): 1–13.
- Lupton, Deborah. *The Quantified Self*. Cambridge and Malden, MA: Polity Press, 2016.
- Lupton, Deborah. "Quantifying the Body: Monitoring and Measuring Health in the Age of mHealth Technologies." *Critical Public Health* 23, no. 4 (2013): 393–403.
- Lury, Celia, Luciana Parisi, and Tiziana Terranova. *Theory, Culture, and Society Special Issue on Topologies of Culture* 29, no. 4–5 (July–September 2012).
- Lustgarten, Abraham. "As Colorado River Dries, the U.S. Teeters on the Brink of Larger Water Crisis." *ProPublica*, August 25, 2022. <https://www.propublica.org/article/colorado-river-water-shortage-jay-famiglietti>.

- Lydenberg, Robin. *Word Cultures: Radical Theory and Practice in William S. Burroughs' Fiction*. Champaign: University of Illinois Press, 1987.
- Lyon, David. "Surveillance Culture: Engagement, Exposure, and Ethics in Digital Modernity." *International Journal of Communication* 11 (2017): 824–842.
- MacLure, Maggie. "Researching without representation? Language and materiality in post-qualitative methodology." *International Journal of Qualitative Studies in Education* 26, no. 6 (2013): 658–667. <https://doi.org/10.1080/09518398.2013.788755>.
- Malabou, Catherine. *The New Wounded*. Translated by Steven Miller. New York: Fordham University Press, 2012.
- Malabou, Catherine. *Ontology of the Accident: An Essay on Destructive Plasticity*. Translated by Carolyn Shread. Cambridge, UK and Malden, MA: Polity Press, 2012.
- Malabou, Catherine. *Plasticity: The Promise of Explosion*. Edited by Tyler M. Williams. Edinburgh: Edinburgh University Press, 2022.
- Malabou, Catherine. "Q/A Catherine Malabou: What Pleasure is There in Thinking Today?" *Spike* 67 (Spring 2021). <https://www.spikeartmagazine.com/?q=articles/qa-catherine-malabou>.
- Malabou, Catherine. *What Should We Do with Our Brains*. Translated by Sebastian Rand. New York: Fordham University Press, 2008.
- Manning, Erin. *The Minor Gesture*. Durham, NC: Duke University Press, 2016.
- Marks, John. *The Search for the "Manchurian Candidate": The CIA and Mind Control: The Secret History of the Behavioral Sciences*. New York: Norton, 1991.
- Markus, Thomas. *Buildings and Power: Freedom and Control in the Origin of Modern Building Types*. London: Routledge, 1993.
- Martin, Emily. "Mind/Body Problems." *American Ethnologist* 27, no. 3 (2000): 569–590.
- Marx, Karl. *Capital*, Vol. 1 (1867). <https://www.marxists.org/archive/marx/works/1867-c1/ch10.htm#4a>.
- Masani, P.R. *Norbert Wiener, 1894–1964/Vita Mathematica* 5. Basel: Birkhäuser, 1990.
- Massumi, Brian. *Parables for the Virtual: Movement, Affect, Sensation*. Durham, NC: Duke University Press, 2002.
- Massumi, Brian. *The Power at the End of the Economy*. Durham and London: Duke University Press, 2015.
- Maxon, Seth. "How Sleep Deprivation Decays the Mind and Body." *The Atlantic*, December 30, 2013. <https://www.theatlantic.com/health/archive/2013/12/how-sleep-deprivation-decays-the-mind-and-body/282395/>
- McGregor, Sue L.T. "The Nicolescuian and Zurich Approaches to Transdisciplinarity." *Integral Leadership Review* (April–June 2015). <http://integralleadershipreview.com/13135-616-the-nicolescuian-and-zurich-approaches-to-transdisciplinarity/>.

- McAtee, Cammie. "Taking Comfort in the Age of Anxiety: Eero Saarinen's Womb Chair." In *Atomic Dwelling: Anxiety, Domesticity, and Postwar Architecture*, edited by Robin Schuldenfrei, 3–25. London and New York: Routledge, 2012.
- McCulloch, Warren S. "The Brain Computing Machine." *Electrical Engineering* 68, no. 6 (June 1949): 492–497.
- McCulloch, Warren S. and Walter Pitts. "A logical calculus of the ideas imminent in nervous activity." *Bulletin of Mathematical Biophysics* 5 (December 1943): 115–133.
- McEwen Bruce S., and John H. Morrison. "The Brain on Stress: Vulnerability and Plasticity of the Prefrontal Cortex over the Life Course." *Neuron* 79, no. 1, July 10, 2013. <https://doi.org/10.1016/j.neuron.2013.06.028>.
- McEwen, Cameron. "Defining the Understanding Media Project." *McLuhan's New Sciences*, April 2020. <https://mcluhansnewsciences.com/mcluhan/2020/04/defining-the-understanding-media-project/#fn-54496-4>.
- McFadden, George, and Robert Mayoh. "Death Isn't Necessarily Final" (1974). In *Burroughs Live: The Collected Interviews of William S. Burroughs, 1960–1997*, edited by Sylvère Lotringer, 261–270. Los Angeles and New York: Semiotext(e), 2001.
- McGill University's "The Brain from Top to Bottom." https://thebrain.mcgill.ca/flash/i/i_01/i_01_m/i_01_m_ana/i_01_m_ana.html.
- McLuhan, Marshall. "Living in an Acoustic World." Public lecture at University of South Florida, 1970. <http://marshallmcluhanspeaks.com/lecture/1970-living-in-an-acoustic-world/>.
- McLuhan, Marshall. *The Mechanical Bride: Folklore of Industrial Man*. London: Duckworth Overlook, 2011/1951.
- McLuhan, Marshall, and Quentin Fiore. *Medium is the Massage: An Inventory of Effects*. New York, London, Toronto: Bantam Books, 1967.
- McLuhan, Marshall. "Notes on Burroughs." *The Nation* 199, no. 21 (1964): 517–519. <https://realitystudio.org/criticism/notes-on-burroughs/>.
- McLuhan, Marshall. *Understanding Media: The Extensions of Man*. Cambridge, MA and London: The MIT Press, 1994/1964.
- McMaster, Geoff. "Once thriving Church of Scientology faces extinction, says cult tracker." University of Alberta Folio, January 11, 2018. <https://www.ualberta.ca/folio/2018/01/once-thriving-church-of-scientology-faces-extinction-says-cult-tracker.html>.
- Meikle, Jeffrey. *American Plastic: A Cultural History*. New Brunswick, NJ: Rutgers University Press, 1995.
- Melley, Timothy. "Brain Warfare: The Covert Sphere, Terrorism, and the Legacy of the Cold War." *Grey Room* 45 (Fall 2011): 18–41.
- Menakam, Resma. "White Fertility." *Resmaa Menakem | Embodied Anti-Racist Education*, June 7, 2022. <https://www.resmaa.com/somatic-learnings/white-ferality>.

- Mesquita, Leopoldo. “The Lancasterian monitorial system as an education industry with a logic of capitalist valorisation.” *Paedagogica Historica: International Journal of the History of Education* 48, no. 5 (October 2012): 661–675.
- Messinger, Eli C. “Violence to the Brain.” In *Schizo-Culture: The Book*, edited by Sylvère Lotringer, 66–71. South Pasadena, CA: Semiotext(e), 2013.
- Mills, C. Wright. *The Power Elite*, New Edition. New York: Oxford University Press, 2000.
- Mills, John A. *Control—A History of Behavioral Psychology*. New York: NYU Press, 1998.
- Massachusetts Institute of Technology, The Office of Public Relations, press release announcing publication of second edition of Professor Wiener’s *Cybernetics*, May 31, 1961. MIT Institute Archives & Special Collections. MIT News Office (AC0069).
- Montessori, Maria. *The Discovery of the Child*. Translated by M. Joseph Costelloe. New York: Ballantine Books, 1967.
- Montévil, Maël, Bernard Stiegler, Giuseppe Longo, Ana Soto, and Carlos Sonnenschein. “Anthropocene, exosomaticization and negentropy.” *Internation/Geneva2020*. <https://internation.world/arguments-on-transition/chapter-1/>.
- Morgan, Ted. *Literary Outlaw: The Life and Times of William S. Burroughs*. New York and London: W. W. Norton and Company, 1988.
- Morris, David. “Schizo-Culture in Its Own Voice.” In *Schizo-Culture: The Event*, edited by Sylvère Lotringer and David Morris, 205–206. South Pasadena, CA: Semiotext(e), 2013.
- Mottram, Eric. *William Burroughs: The Algebra of Need*. Buffalo: Intrepid Press, 1971.
- Mottram, Eric. “William Burroughs Conference: Eric Mottram lecture.” William Burroughs Conference at Naropa University, July 21, 1985. <http://archives.naropa.edu/digital/collection/p16621coll1/id/1719/>.
- Moulaert, Frank, Diana MacCallum, Abid Mehmood, and Abdelilah Hamdouch, eds. *The International Handbook on Social Innovation and Transdisciplinary Research*. Cheltenham, UK and Northampton, MA: Edward Elgar, 2013.
- Munster, Anna. “Distended Nervous System: Networked Media and its Neurological Turns.” In *An Activist Neuroaesthetic Reader*, edited by Warren Neidich, 44–69. Berlin: Archive Books, 2021.
- Münsterberg, Hugo. *Psychology and Industrial Efficiency*. Boston: Houghton Mifflin Company, 1913.
- Negt, Oskar and Alexander Kluge. *Public Sphere and Experience: Toward an Analysis of the Bourgeois and Proletarian Public Sphere*. Translated by Peter Labanyi, Jamie Owen Daniel, and Assenka Oksiloff. Minneapolis and London: University of Minnesota Press, 1993/1972.
- Neidich, Warren, ed. *An Activist Neuroaesthetic Reader*. Berlin: Archive Books, 2021.

- Neidich, Warren. "Feedback and the Statistician: Towards a Theory of Epigenetic Architecture." In *Tracelation*, by Tyne Claudia Pollman, 77–92. Berlin: Archive Books, 2017.
- Neidich, Warren. *Glossary of Cognitive Activism (For a Not so Distant Future)*. Berlin: Archive Books, 2019.
- Neidich, Warren. "The Neurobiopolitics of Global Consciousness." *Sarai Reader 06: Turbulence* (2006): 222–236.
<http://archive.sarai.net/files/original/c294e77df4a23a33c4f0657a62d3323a.pdf>.
- Neidich, Warren, and Arne De Boever, eds. *The Psychopathologies of Cognitive Capitalism: Part One*. Berlin: Archive Books, 2013.
- Neidich, Warren, ed. *The Psychopathologies of Cognitive Capitalism: Part Two*. Berlin: Archive Books, 2013.
- Nelson, Daniel, ed. *A Mental Revolution: Scientific Management since Taylor*. Columbus: Ohio State University Press, 1992.
- The Nervousness of Politics." *Libcom.org*, April 14, 2014.
<https://libcom.org/article/nervousness-politics>.
- Newman, Neville F. "Shapes and Spaces: Inside Joseph Lancaster's Monitorial 'Laboratory.'" *The Journal of Educational Thought* 32, no. 2 (August 1998): 139–168.
- Newman, Neville F. "The Subject of a Disciplined Space: Power Relations in England's Nineteenth-Century Monitorial Schools." PhD dissertation, McMaster University, 1998.
<http://hdl.handle.net/11375/15763>.
- New York Times* [Ed.]. "Dr. Norbert Wiener Dead at 69; Known as Father of Automation." *New York Times*, March 19, 1964. <https://www.nytimes.com/1964/03/19/archives/dr-norbert-wiener-dead-at-69-known-as-father-of-automation.html>.
- Nicotra, Jody. "The Force of Habit: Rhetoric, Repetition, and Identity from Darwin to Drugs." PhD dissertation, The Pennsylvania State University, 2005.
https://etda.libraries.psu.edu/files/final_submissions/2516.
- Noble, David W. *The Paradox of Progressive Thought*. Minneapolis: University of Minnesota Press, 1967/1958.
- Norden, Eric. "Playboy Interview: Marshall McLuhan—A Candid Conversation with the High Priest of Popcult and Metaphysician of Media." *Playboy Magazine* 16, no. 3 (March 1969): 53–74, 158.
- Noys, Benjamin. *Malign Velocities: Accelerationism and Capitalism*. Winchester, UK and Washington, USA: Zero Books, 2014.
- NRC, Div Medical Sciences, Comm on Medical Research, Conference on Group Therapy, November 1, 1944, RESTRICTED. Penfield Fonds, Box 198a WP-CTEE 2.1-2.12, Folder II: Neuropsychiatry: Committee of CMR USA WP-CTEE 2.10.
- Obsolete Capitalism. *Control, Modulation and Algebra of Evil in Burroughs and Deleuze*. Translated by Ettore Lancellotti and Letizia Rustichelli. Rizosfera, 2018.

https://monoskop.org/images/2/20/Obsolete_Capitalism_-_Control%2C_Modulation_and_Algebra_of_Evil_in_Burroughs_and_Deleuze.pdf.

- Obsolete Capitalism. *Deleuze and the Algorithm of the Revolution*. Reggio Emilia: Rizosfera/The Strong of the Future, 2016.
https://monoskop.org/File:Obsolete_Capitalism_Deleuze_and_the_Algorithm_of_the_Revolution.pdf.
- Odegard, Peter H. "Social Dynamics and Public Opinion." *The Public Opinion Quarterly* 3, no. 2 (April 1939): 239–250. <https://doi.org/10.1086/265287>.
- O'Donnell, John M. *The Origins of Behaviorism: American Psychology, 1870–1920*. New York: New York University Press, 1985.
- O'Donohue, William, and Richard Kitchener, eds. *Handbook of Behaviorism*. San Diego, London et al.: Academic Press, 1999.
- Ohler, Norman. *Blitzed: Drugs in Nazi Germany*. Translated by Shaun Whiteside. New York and London: Penguin Books Ltd., 2016.
- Olds, James. "Pleasure Centers in the Brain." *Scientific American*, Vol. 195, October 1, 1956: 105–116.
- Olds, James, and Peter Milner. "Positive reinforcement produced by electrical stimulation of the septal area and other regions of rat brain." *Journal of Comparative and Physiological Psychology* 47, no. 6 (December 1954): 419–427.
- Ortega, Tony. "The Mother and Child Reunion: Another Dianetics Nightmare." *The Underground Bunker*, March 21, 2013. <https://tonyortega.org/2013/03/21/the-mother-and-child-reunion-another-dianetics-nightmare/>.
- Orwell, George. *The Road to Wigan Pier*. London: Victor Gollancz, 1937.
- Osborne, Peter. "Problematizing Disciplinarity, Transdisciplinary Problematics." *Special Issue: Transdisciplinary Problematics, Theory, Culture & Society* 32, no. 5–6 (2015): 3–35.
- Osborne, Peter, Stella Sandford, and Éric Alliez, eds. *Special Issue: Transdisciplinary Problematics, Theory, Culture & Society* 32, no. 5–6 (2015).
- Papacharissi, Zizi. *Affective Publics: Sentiment, Technology, and Politics*. Oxford and New York: Oxford University Press, 2015.
- Papacharissi, Zizi. "Affective publics and structures of storytelling: sentiment, events and mediality." *Information, Communication & Society* (2015).
<http://dx.doi.org/10.1080/1369118X.2015.1109697>.
- Parikka, Jussi. "Cultural Techniques of Cognitive Capitalism: Metaprogramming and the Labour of Code." *Cultural Studies Review* 20, no. 1 (March 2014): 30–52.
- Parikka, Jussi. "Media Studies—Studies of Relations, Ecology, Waste." *Machinology*, March 11, 2011. <https://jussiparikka.net/2011/03/11/media-studies-studies-of-relations-ecology-waste/>.

- Parisi, Luciana. “Automated Cognition and Capital.” In *An Activist Neuroaesthetic Reader*, edited by Warren Neidich, 108–141. Berlin: Archive Books, 2021.
- Parisi, Luciana. *Contagious Architecture: Computation, Aesthetics, and Space*. Cambridge, MA and London: The MIT Press, 2013.
- Pavlov, Ivan. “The Experimental Psychology and Psychopathology of Animals” (1903). 14th International Medical Congress, Madrid, Spain, April 23–30, 1903.
- Pena, Paz and Joana Varon. “Oppressive A.I.: Feminist Categories to Understand its Political Effects.” *Why Is A.I. a Feminist Issue?* November 16, 2021.
<https://notmy.ai/news/oppressive-a-i-feminist-categories-to-understand-its-political-effects/>.
- Penfield Fonds. BOX180B Readings-Home Files 1-8-Notes on Talks, Unpublished Papers. Courtesy of Osler Library, McGill University, Montreal, Canada.
- Penfield Fonds. BOX 198a, WP-CTEE 2.1-2.12. Wartime and Postwar Research Committees. Courtesy of Osler Library, McGill University, Montreal, Canada.
- Penfield Fonds. BOX 204a, WP-CTEE.0.63-WP-CTEE.0.65 , “Confidential” and “Secret” WWII reports. Courtesy of Osler Library, McGill University, Montreal, Canada.
- Penfield Fonds. Folder II: WP-CTEE 0.64 Canadian Liaison Reports Secret. Courtesy of Osler Library, McGill University, Montreal, Canada.
- Penfield Fonds. BOX 205, WP-CTEE 67–70 and J10. Wartime and Postwar Research Committees. Courtesy of Osler Library, McGill University, Montreal, Canada.
- Penfield Fonds. BOX 221b, WP-CTEE 2.18-2.20 & 3.1-3.4. Flying Personnel Research Committee. Courtesy of Osler Library, McGill University, Montreal, Canada.
- Penfield Fonds. BOX 445, E/PN 5.1-6-6 MNI Research. Courtesy of Osler Library, McGill University, Montreal, Canada.
- Pennington, Roy. “Some Disparate Mentionables” (1973).
<https://realitystudio.org/bibliographic-bunker/roy-pennington-on-mayfair-academy-series-more-or-less/some-disparate-mentionables/>.
- Pessoa, Fernando. *The Book of Disquiet*. Edited and translated by Margaret Jull Corta. New York: Serpent’s Tail, 1991.
- Peters, Benjamin. “From Cybernetics to Cyber Networks: Norbert Wiener, the Soviet Internet, and the Cold War Dawn of Information Universalism.” PhD dissertation, Columbia University, New York, 2010.
<https://www.proquest.com/openview/44f0bf9821f7f3e580b12d6f3eb598ab/1?pq-origsite=gscholar&cbl=18750>.
- Pfohl, Stephen. “The Cybernetic Delirium of Norbert Wiener.” In *Digital Delirium*, edited by Arthur Kroker and Marilouise Kroker, 114–131. Montreal: New World Perspectives, 2001.
- Piaget, Jean. “The stages of the intellectual development of the child.” *Bulletin of the Menninger Clinic* 26, no. 3 (1962): 120–128.

- Pickering, Andrew. *The Cybernetic Brain: Sketches of Another Future*. Chicago and London: The University of Chicago Press, 2010.
- Pilkington, Mark. "Night School." *The Guardian*, March 3, 2005.
<https://www.theguardian.com/education/2005/mar/03/research.highereducation>.
- Pillsbury, Walter Bowers. *Attention*. New York: The MacMillan Co., 1908.
- Pitts-Taylor, Victoria. *The Brain's Body: Neuroscience and Corporeal Politics*. Durham and London: Duke University Press, 2016.
- Plant, Sadie. *Writing on Drugs*. New York: Picador, 2001.
- Plato. *The Republic* (360 BCE). Translated by Benjamin Jowett. *The Internet Classics Archive*. <http://classics.mit.edu/Plato/republic.html>.
- Porter, Dorothy, ed. *Social Medicine and Medical Sociology in the Twentieth Century*. Rodopi: Amsterdam and Atlanta, GA, 1997.
- Preciado, Paul B. "Learning from the Virus." *Artforum* (May/June 2020).
<https://www.artforum.com/print/202005/paul-b-preciado-82823>.
- Preciado, Paul. *Testo Junkie: Sex, Drugs, and Biopolitics in the Pharmacopornographic Era*. Translated by Bruce Benderson. New York: The Feminist Press at CUNY, 2013.
- Price, David H. *Cold War Anthropology: The CIA, the Pentagon, and the Growth of Dual Use Anthropology*. Durham, NC: Duke University Press, 2016.
- Proferes, Nicholas. "The Many Mea Culpas of Mark Zuckerberg: The Facebook founder has this down to a formula." *Slate*, March 22, 2018.
<https://slate.com/technology/2018/03/mark-zuckerbergs-long-history-of-mea-culpas.html>.
- Purves, Dale, George J. Augustine, David Fitzpatrick, Lawrence C. Katz, Anthony-Samuel LaMantia, James McNamara, and S. Mark Williams, eds. *Neuroscience*, 2nd ed. Sunderland, MA: Sinauer Associates, 2001.
- Qanon Anonymous, "Premium Episode 62: MK ULTRA & Operation Midnight Climax," February 12, 2020. <https://podcasts.apple.com/ca/podcast/qanon-anonymous/id1428209307?i=1000465425485>.
- Rajchman, John. *The Deleuze Connections*. Cambridge, MA and London: The MIT Press, 2000.
- Raley, Rita. "Dataveillance and Counterveillance." *"Raw Data" is an Oxymoron*. Edited by Lisa Gitelman. Cambridge, MA and London: The MIT Press, 2013.
- Ramsay, Douglas S. and Stephen C. Woods. "Clarifying the Roles of Homeostasis and Allostasis in Physiological Regulation." *Psychological Review* 121, no. 2 (2014): 225–247.
- Read, Jason and Jeremy Gilbert. "Talkin' Transindividuation and Collectivity." *Capacious: Journal for Emerging Affect Inquiry* 1, no. 4 (2019): 56–77.
- Reigart, John Franklin. "The Lancasterian System of Instruction in the Schools of New York City." PhD dissertation, Teachers College at Columbia University, New York, 1916.

http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6316626_000/ldpd_6316626_000.pdf.

- Renzi, Alessandra. "From Collectives to Connectives: Italian Media Activism and the Repurposing of the Social." PhD dissertation, Sociology and Equity Studies, Ontario Institute for Studies in Education, University of Toronto, Toronto, 2011.
- Reser, David, and Marcello Rosa. "Perceptual elements in brain mechanisms of acoustic communication in humans and nonhuman primates." *Behavioral and Brain Sciences* 37, no. 6 (December 2014): 571–572.
- Rizosfera. *Digital Neuroland: An Interview with Tony D. Sampson*. Rizosfera, October 2017. https://monoskop.org/images/e/ef/Digital_Neuroland._An_interview_with_Tony_D._Sampson.pdf.
- Roes, Frans. "Interview with E.O. Wilson." Harvard University, Cambridge, MA, March 27, 1997. <http://www.froes.dds.nl/WILSON.htm>.
- Rosenblueth, Arturo, Norbert Wiener, and Julian Bigelow. "Behavior, Purpose and Teleology." *Philosophy of Science* 10, no. 1 (January 1943): 18–24.
- Rosenblueth, Arturo. *Mind and Brain: A Philosophy of Science*. Cambridge, MA and London: The MIT Press, 1970.
- Roszak, Theodore. *The Cult of Information: A Neo-Luddite Treatise on High-Tech, Artificial Intelligence, and the True Art of Thinking*. Berkeley, Los Angeles, London: University of California Press, 1994/1986.
- Rudé, George. *The Crowd in the French Revolution*. London, Oxford, New York: Oxford University Press, 1959.
- Ryan, Michael. "Deconstruction and Radical Teaching." *Yale French Studies* 63, *The Pedagogical Imperative: Teaching as a Literary Genre* (1982): 45–58.
- Sacks, Oliver. *The Man Who Mistook His Wife for a Hat*. Toronto: Vintage Canada, 2021/1985.
- Samelson, Franz. "Struggle for Scientific Authority: The Reception of Watson's Behaviorism, 1913–1920." *Journal of the History of the Behavioral Sciences* 17 (1981): 399–425.
- Sampson, Tony D. *The Assemblage Brain: Sense Making in Neuroculture*. Minneapolis and London: University of Minnesota Press, 2017.
- Sampson, Tony D. "Digital Neuroland: An Interview with Tony D. Sampson by Rizosfera Collective," July 2017. <http://obsoletecapitalism.blogspot.com/2017/08/digital-neuroland-interview-with-tony-d.html?spref=fb> and <https://viralcontagion.blog/tag/rizosfera-collective/>.
- Sampson, Tony D. "Digital Neuroland: An interview with Tony Sampson by Rizosfera Collective." *Rhizonomics (RZN)* 002, October 2017. https://monoskop.org/images/5/5e/Rizosfera_Neuropaesaggi_digitali_Intervista_a_Tony_D_Sampson.pdf.

- Sampson, Tony D. "Machine-Fictioning Neuroculture: Methods for Critiquing Neuroscientific Interventions in Art and Philosophy." In *An Activist Neuroaesthetic Reader*, edited by Warren Neidich, 320–349. Berlin: Archive Books, 2021.
- Sampson, Tony D. *A Sleepwalker's Guide to Social Media*. Cambridge and Medford, MA: Polity Press, 2020.
- Sampson, Tony D. *Virality: Contagion Theory in the Age of Networks*. Minneapolis and London: University of Minnesota Press, 2012.
- Sampson, Tony D. and Jussi Parikka. "Tarde as Media Theorist: An Interview with Tony D. Sampson." *Theory, Culture & Society*, January 25, 2013. <https://www.theoryculturesociety.org/blog/tarde-as-media-theorist-an-interview-with-tony-d-sampson>.
- Sarasin, Phillipp. "The Body as Medium: Nineteenth-Century European Hygiene Discourse." Translated by Brian Hanrahan. *Grey Room* 29 (Winter 2008): 48–65.
- Saraswati, Dr. Swami Karmananda. "Biofeedback: Electronic Age of Yoga." *Yoga Magazine* (April 1978). <http://www.yogamag.net/archives/1970s/1978/7804/7804bio.html>.
- Sawchuk, Kim, and Owen Chapman. "Research-Creation: Intervention, Analysis and 'Family Resemblances.'" *Canadian Journal of Communication* 37 (2012): 5–26.
- Schreiber, Major Julius. "Morale Aspect of Military Mental Hygiene" (1943). Penfield Fonds, Box 198a, WP-CTEE 2.1-2.12. Also see, FOLDER II: Neuropsychiatry: Committee of Medical Research (CMR) USA WP-CTEE 2.10. Osler Library, McGill University, Montreal.
- Schüll, Natasha Dow. *Addiction by Design: Machine Gambling in Las Vegas*. Princeton and Oxford: Princeton University Press, 2012.
- Schuster, David G. *Neurasthenic Nation: America's Search for Health, Happiness, and Comfort 1869–1920*. New Brunswick: Rutgers University Press, 2011.
- Scorpio, Felix. "Tactics of Deconditioning." In *Burroughs Live: The Collected Interviews of William S. Burroughs, 1960–1997*, edited by Sylvère Lotringer, 116–125. Los Angeles and New York: Semiotext(e), 2001.
- Scott, David. *Gilbert Simondon's Psychic and Collective Individuation: A Critical Introduction and Guide*. Edinburgh: Edinburgh University Press, 2004.
- Scott, Perry. "Scientology Training Routines: A Critical Review." Nd. <https://www.cs.cmu.edu/~dst/Secrets/TR/critique.html>.
- Select Committee on Intelligence and Committee on Human Resources. United States Senate, Ninety-Fifth Congress, First Session, August 3, 1977. Washington, DC: Government Printing Office, 1977. <https://www.cia.gov/readingroom/docs/CIA-RDP88-01070R000301530003-5.pdf>.
- Sennett, Richard. "The Search for a Place in the World." In *Architecture of Fear*, edited by Nan Ellin, 61–68. New York: Princeton Architectural Press, Inc., 1997.

- Sherrington, Sir Charles Scott. *Man on his Nature*, the Gifford Lectures, Edinburgh, 1937–1938. Cambridge, UK: Cambridge at the University Press, 1940.
- Simondon, Gilbert. *On the Mode of Existence of Technical Objects*. Translated by Ninian Mellaphy. London, ON: University of Western Ontario, 1980.
- Simondon, Gilbert. *On the Mode of Existence of Technical Objects*. Translated by Cecile Malaspina and John Rogrove. Minneapolis: Univocal Publishing, 2017.
- Silverman, Hugh. “Malabou, Plasticity, and the Sculpturing of the Self.” *Concentric: Literary and Cultural Studies* 36, no. 2 (September 2010): 89–102.
- Sluckin, Wladyslaw. *Minds and Machines*. London: Penguin, 1954.
- Smiles, Samuel. *Self-Help, with Illustrations of Character and Conduct*. London: John Murray, 1897/1859. <https://www.gutenberg.org/cache/epub/935/pg935-images.html>.
- Smith, Maquard, and Joanne Morra, eds. *The Prosthetic Impulse: From a Posthuman Present to a Biocultural Future*. Cambridge, MA and London: The MIT Press, 2006.
- Stark, Luke. “The emotive politics of digital mood tracking.” *New Media & Society* 22, no. 11 (2020): 2039–2057.
- St. Pierre, Elizabeth Adams. “An Always Already Absent Collaboration.” *Cultural Studies – <-> Critical Methodologies* 14, no. 4 (2014): 374–379.
- St. Pierre, Elizabeth Adams. “Arts of Existence: The Construction of Subjectivity in Older White Southern Women.” PhD dissertation, Ohio State University, 1995. http://rave.ohiolink.edu/etdc/view?acc_num=osu1217010855.
- St. Pierre, Elizabeth Adams. “A Brief and Personal History of Qualitative Research.” *Journal of Curriculum Theorizing* 30, no. 2 (2014): 2–19.
- St. Pierre, Elizabeth Adams. “Deleuze and Guattari’s Language for New Empirical Inquiry.” *Educational Philosophy and Theory* 49, no. 11 (2007): 1080–1089.
- St. Pierre, Elizabeth Adams. “Post Qualitative Inquiry.” Keynote lecture, Australian Association of Research in Education, New Zealand Association for Research in Education, Brisbane, Australia, December 2, 2014. <https://www.aare.edu.au/assets/documents/Elizabeth-Adams-St.-Pierre-ppt-presentation.pdf>.
- St. Pierre, Elizabeth Adams. “Post Qualitative Inquiry, the Refusal of Method, and the Risk of the New.” *Qualitative Inquiry* 27, no. 1 (2021): 3–9.
- Stengers, Isabelle. “Introductory Notes on an Ecology of Practices.” *Cultural Studies Review* 11, no. 1 (January 2005): 183–196.
- Stengers, Isabelle. “Wondering about materialism.” *The Speculative Turn: Continental Materialism and Realism*, edited by Levi Bryant, Nick Srnicek, and Graham Harman, 368–380. Melbourne: re.press, 2010.

- Stiegler, Bernard. *The Age of Disruption: Technology and Madness in Computational Capitalism*. Translated by Daniel Ross. Medford, MA and Cambridge, UK: Polity Press, 2019.
- Stiegler, Bernard. *States of Shock: Stupidity and Knowledge in the Twenty-First Century*. Translated by Daniel Ross. Malden, MA and Cambridge: Polity Press, 2015.
- Stiegler, Bernard. *Taking Care of Youth and the Generations*. Translated by Stephen Baker. Stanford: Stanford University Press, 2010.
- Stiegler, Bernard. *Technics and Time, 1: The Fault of Epimetheus*. Translated by Richard Beardsworth and George Collins. Stanford, CA: Stanford University Press, 1998.
- Stiegler, Bernard. “The Time Saved Through Automation Must Be Granted to the People.” Translated by Sam Kinsley. *Samkinsley.com*, July 18, 2016. <http://www.samkinsley.com/2016/07/18/bernard-stiegler-the-time-saved-through-automation-must-be-granted-to-the-people-translation/>.
- Stop Mind Control and Ritual Abuse Today (SMART). “Mind Control Documents & Links,” nd. <https://ritualabuse.us/mindcontrol/mc-documents-links/>.
- Sun, Yan, et. al., “Brief Report: Increased Addictive Internet and Substance Use Behavior During the COVID-19 Pandemic in China.” *American Journal of Addiction*, June 4, 2020. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7300868/>.
- Taine, Hippolyte. *The Origins of Contemporary France: The Ancien Regime*, Vol. 1. Translated by John Durant. New York: Henry Holt and Company, 1876.
- Tarde, Gabriel. “Economic Psychology.” Translated by Alberto Toscano. *Economy and Society* 36, no. 4 (2007): 154–181.
- Tarde, Gabriel. *The Laws of Imitation*. Translated by Elsie Clews Parsons. New York: Henry Holt and Company, 1903.
- Tarde, Gabriel. “The Public and the Crowd.” In *Gabriel Tarde: On Communication and Social Influence, Selected Papers*. Edited by Terry N. Clark. Chicago and London: University of Chicago Press, 1969.
- Tarde, Gabriel. *Social Laws: An Outline of Sociology*. Translated by Howard C. Warren. Kitchener, ON: Batoche Books, 2000.
- Tari, Marcello. *There Is No Unhappy Revolution: The Communism of Destitution*. Brooklyn: Common Notions, 2021.
- Taylor, Frederick Winslow. *Scientific Management, Comprising: Shop Management, The Principles of Scientific Management, Testimony Before the Special House Committee*. Westport, CT: Greenwood Press, 1947.
- Taylor, Mark C. *Kierkegaard’s Pseudonymous Authorship: A Study of Time and the Self*. Princeton and London: Princeton University Press, 1975.
- Teeuwen, Dave. “Interview with Graham Masterson on William S. Burroughs,” November 2, 2009. <https://realitystudio.org/interviews/interview-with-graham-masterton-on-william-s-burroughs/>.

- Teixeira Pinto, Ana. "Feedback Forms." In 2018–2019 HTDTWT Seminar series, Dutch Art Institute, Seminar 6: April 2019. <https://dutchartinstitute.eu/page/12015/2018-2019-htdtwt-seminar-ana-teixeira-pinto-feedback-forms---from>.
- Teixeira Pinto, Ana. "Feedback Forms: Behaviorism, Cybernetics, Autopoiesis." In *Bots, Bodies, Beasts: The Art of Being Humble*, a conference-festival organized by the Gerrit Rietveld Academie, April 7–10, 2016, Theatre De Brakke Grond, Amsterdam. <https://www.youtube.com/watch?v=hzybQ5C36sI>.
- Terranova, Tiziana. *Network Culture: Politics for the Information Age*. London and Ann Arbor, MI: Pluto Press, 2004.
- Terranova, Tiziana. "Ordinary Psychopathologies of Cognitive Capitalism." In *Activist Neuroaesthetics Reader*. Edited by Warren Neidich, 70–90. Berlin: Archive Books, 2021.
- Thomas, Taliesin. "Interview with Dr. John Rajchman." *IDSVA Newsletter* (Fall 2015). <https://www.idsva.edu/newsletter-fall-2015/2015/11/6/interview-with-dr-john-rajchman-idsva-newsletter-fall-2015>.
- Thomas, Timothy L. "Russia's Reflexive Control Theory and the Military." *Journal of Slavic Military Studies* 17 (2014): 237–256. <https://doi.org/10.1080/13518040490450529>.
- Thompson, Clive. "Clive Thompson on How Twitter Creates a Social Sixth Sense." *Wired*, June 6, 2007. <http://www.wired.com/2007/06/st-thompson-4/>.
- Thrift, Nigel. *Non-Representational Theory: Space|Politics|Affect*. London and New York: Routledge, 2008.
- Thrift, Nigel. "Pass It On: Towards a Political Economy of Propensity." In *The Social after Gabriel Tarde: Debates and Assessments*, edited by Matei Candea, 248–270. London: Routledge, 2010.
- Thrift, Nigel. "Remembering the technological unconscious by foregrounding knowledges of position." *Environment and Planning D: Society and Space* 22, no. 1 (1994): 175–190.
- Tice, Patricia M. *Altered States: Alcohol and Other Drugs in America*. Rochester: The Strong Museum, 1992.
- Till, Christopher. "Propaganda through 'Reflexive Control' and the Mediated Construction of Reality." *New Media & Society* 23, no. 6 (2021): 1362–1378. <https://journals.sagepub.com/doi/full/10.1177/1461444820902446>.
- Tiqqun. *The Cybernetic Hypothesis*. Translated by Robert Hurley. South Pasadena: Semiotext(e), 2020.
- Tiqqun. "Notes on *The Cybernetic Hypothesis*" (2010). <http://cybernet.jottit.com/>.
- Tiqqun. *This is Not a Program*. Translated by Joshua David Jordan. Los Angeles: Semiotext(e), 2011.
- Todd, James T., and Edward K. Morris, eds. *Modern Perspectives on John B. Watson and Classical Behaviorism*. Westport, CT: Greenwood Press, 1994.
- Toeffler, Alvin. *Future Shock*. New York: Bantam Books, 1970.

- Toews, David. "The New Tarde: Sociology After the End of the Social." *Theory, Culture & Society* 20, no. 5 (October 2003): 81–98.
- Tong, Zia. *The Reality Bubble: Blind Spots, Hidden Truths, and the Dangerous Illusions That Shape Our World*. London and Toronto: Allen Lane, 2019.
- Tonkonoff, Sergio. *From Tarde to Deleuze and Foucault: The Infinitesimal Revolution*. Cham, Switzerland: Palgrave Macmillan, 2017.
- Torbay, Jordan. "The work of Donald Ewen Cameron: from psychic driving to MK Ultra." *History of Psychiatry* 34, no. 3 (2023): 320–330.
- Tsakiris, Manos. "Politics is visceral." Edited by Sally Davies. *aeon*, September 18, 2020. <https://aeon.co/essays/politics-is-in-peril-if-it-ignores-how-humans-regulate-the-body>.
- Tufekci, Zeynep. "Engineering the public: Big data, surveillance, and computational politics." *First Monday* 19, no. 7 (July 2014). <https://firstmonday.org/ojs/index.php/fm/article/view/4901>.
- Turner, Fred. *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism*. Chicago and London: The University of Chicago Press, 2006.
- Upton, Dell. "Lancasterian Schools, Republican Citizenship, and the Spatial Imagination in Early Nineteenth Century America." *Journal of the Society of Architectural Historians* 55, no. 3 (September 1996): 238–254.
- Van der Kloot, William. "Mirrors and Smoke: A. V. Hill, His Brigands, and the Science of Anti-Aircraft Gunnery in World War I." *Notes and Records of the Royal Society* 65, no. 4 (2011): 393–410. <https://doi.org/10.1098/rsnr.2010.0090>.
- Van Sant, Gus, dir. "The Discipline of Do Easy," 16mm film, 9 mins., 1978. <https://www.youtube.com/watch?v=S4Aio-lrVo8>.
- Vento, Carol Schultz. *The Hidden Legacy of World War II: A Daughter's Journey of Discovery*. Mechanicsburg: Sunbury Press, 2011.
- Verstrynge, Karl. "Being and Becoming a Virtual Self: Taking Kierkegaard into the Realm of Online Social Interaction." *Kierkegaard Studies Yearbook* 2011, no. 2011 (2011): 303–320. <https://doi.org/10.1515/9783110236514.303>.
- Virilio, Paul. *A Landscape of Events*. Translated by Julie Rose. Cambridge, MA and London: The MIT Press, 2000.
- Virilio, Paul, and Sylvère Lotringer. *Crepuscular Dawn*. Translated by Mike Taormina. New York and Los Angeles: Semiotext(e), 2002.
- Virno, Paolo. *A Grammar of the Multitude*. New York and Los Angeles: Semiotext(e), 2004.
- Virno, Paolo. "Reading Gilbert Simondon: Transindividuality, Technical Activity, and Reification." *Radical Philosophy* 136 (2006): 34–43.
- Vosper, Cyril. *The Mind Benders*. London: Neville Spearman Limited, 1971. <https://www.apologeticsindex.org/The%20Mind%20Benders.pdf>.

- Wahl, Bill. "The Discipline of Do Easy." *The Humanistic Psychologist* 41 (2013): 70–74.
- Walker, Abe. "'What Can a Crowd Do?,' Revisiting Tarde after the Demise of the Public." *Distinktion: Scandinavian Journal of Social Theory* 14, no. 2 (2013): 227–231.
- Walter, William Grey. *The Living Brain*. London: Gerald Duckworth & Co. Ltd., 1953.
- Walter, William Grey. "The past and future of cybernetics in human development." In *Progress of Cybernetics, Volume 1: Main Papers, The Meaning of Cybernetics, Neuro- and Biocybernetics*. Edited by J. Rose. (Proceedings of the First International Congress of Cybernetics, London, 1969.) Gordon and Breach: London and New York, September 1970.
- Warner, Michael. *Publics and Counterpublics*. Brooklyn: Zone Books, 2002.
- Warner, Michael. "Publics and Counterpublics (abbreviated version)." *Quarterly Journal of Speech* 88, no. 4 (November 2002): 413–425.
- Watson, John B. *Animal Education: An Experimental Study on the Psychological Development of the White Rat, Correlated with the Growth of its Nervous System*. Chicago: University of Chicago, 1903. <https://wellcomecollection.org/works/qjw4krqd/items?canvas=5>.
- Watson, John B. "An Attempted Formulation of the Scope of Behavior Psychology," *The Psychological Review* 24, no. 5 (September 1917): 329–352.
- Watson, John B. *Behavior: An Introduction to Comparative Psychology*. New York, Henry Holt and Company, 1914.
- Watson, John B. *Behaviorism*. New York and London: Routledge, 1924.
- Watson, John B. "How to Grow a Personality." Radio broadcast, National Broadcasting Company, January 16, 8:45 p.m. EST. Reprinted by the University of Chicago Press, 1932.
- Watson, John B. "Image and Affection in Behavior." *Journal of Philosophy, Psychology and Scientific Methods* 10 (1913): 421–428.
- Watson, John B. "Influencing the Mind of Another." Speech delivered to the Montreal Advertising Club, September 26, 1935 [reprint]. John Broadus Watson Papers.
- Watson, John B. Lecture given at White Sulphur Springs to members of the Drug Manufacturer Association, 1934. Typescript contained in the John Broadus Watson Papers, Manuscript Division, Library of Congress, Washington, DC.
- Watson, John B. "The place of the conditioned-reflex in psychology." *Psychological Review* 23, no. 2 (1916): 89–116.
- Watson, John B. "Psychology as the Behaviorist Views It." *Psychological Review* 20 (1913): 158–177.
- Watson, John B. *Psychology from the Standpoint of a Behaviorist*, 2nd ed. Philadelphia: Lippincott, 1924.

- Watson, John B. "Recent Experiments on How We Lose and Change Our Emotional Equipment." *The Pedagogical Seminary and Journal of Genetic Psychology* 32, no. 2 (1925): 349–371.
- Watson, John B. "Recent experiments on how we lose and change our emotional equipment." In *Psychologies of 1925: Powell Lectures in Psychological Theory*, edited by C. Murchison, 59–81. Worcester: Clark University Press, 1926.
- Watson, John B. "A Schematic Outline of the Emotions." *Psychological Review* 26, no. 3 (1919): 165–196.
- Watson, John B. "Should a Child Have More Than One Mother?" *Liberty* (June 1929): 31–35.
- Watson, John B. "The Unconscious of the Behaviorist." In *The Unconscious: A Symposium*. Edited by E.S. Drummer. New York: Knopf, 1928.
- Watson, John B., and Rosalie Rayner. "Conditioned Emotional Reactions." *Journal of Experimental Psychology* 3, no. 1 (1920): 1–14.
- Watson, John B., and Rosalie Rayner Watson. *Psychological Care of Infant and Child*. London: George Allen & Unwin Ltd., 1928.
<https://archive.org/details/dli.ernet.7917/mode/2up>.
- Watters, Audrey. "Hope for the Future." Keynote at Digifest 2022, March 8, 2022.
<http://hackededucation.com/2022/03/08/hope>.
- Weinstein, Harvey. *Father, Son and CIA*. Toronto: James Lorimer & Company, 1988.
- Wiener, Norbert. *Cybernetics: Or, Control and Communication in the Animal and the Machine*. New York: The Technology Press, 1948.
- Wiener, Norbert. *Cybernetics: Or Control and Communication in the Animal and the Machine*, 2nd ed. Cambridge, MA: MIT Press, 1961/1948.
- Wiener, Norbert. *Cybernetics: Or Control and Communication in the Animal and the Machine*. Cambridge, MA and London: The MIT Press, 2019.
- Wiener, Norbert. *God and Golem, Inc.* Boston: MIT Press, 1964.
- Wiener, Norbert. *The Human Use of Human Beings: Cybernetics and Society*. Boston: Houghton Mifflin, 1954.
- Wiener, Norbert. *I am a Mathematician: The Later Life of a Prodigy*. New York: Doubleday, 1956.
- Wiener, Norbert. "The Machine Age" (1949).
<http://www.nytimes.com/2013/05/21/science/mit-scholars-1949-essay-on-machine-age-is-found.html?pagewanted=2>.
- Wiener, Norbert. "A Scientist Rebels." *The Atlantic* (January 1947).
<https://cdn.theatlantic.com/media/archives/1947/01/179-1/132381596.pdf>.
- Wiener, Norbert, and J.P. Schadé. *Progress in Brain Research 17: Cybernetics of the Nervous System*. Amsterdam/London/New York: Elsevier Publishing Company, 1965.

- Willis, David S. *Scientologist! William S. Burroughs and the 'Weird Cult.'* Beatdom Books: 2013.
- Wilson, Sloan. *The Man in the Grey Flannel Suit*. London: Cassell and Company Ltd., 1956.
- Wolfe, Cary. *What is Posthumanism?* Minneapolis and London: University of Minnesota Press, 2010.
- Wong, Julia Carrie, and Botnik Studios. "I do surfing': An AI-generated Mark Zuckerberg on Facebook's bad year." *The Guardian*, December 27, 2021.
<https://www.theguardian.com/technology/2021/dec/27/mark-zuckerberg-ai-robot-metaverse-facebook>.
- Wormald, Thomas. "Sculpted Selves, Sculpted Worlds: Plasticity and Habit in the Thought of Catherine Malabou." MA dissertation, the University of Western Ontario, 2014.
<https://ir.lib.uwo.ca/etd/2398>.
- Wundt, Wilhelm. *Outlines of Psychology*. Translated by Charles Hubbard Judd. London and New York: Wilhelm Engelmann, 1907.
- Yehuda, Rachel, and Amy Lehrner. "Intergenerational transmission of trauma effects: putative role of epigenetic mechanisms." *World Psychiatry* 17, no. 3 (October 2018): 243–257.
- Zuckerberg, Mark. "Founder's Letter." *Facebook*, October 28, 2021.
<https://about.facebook.com/meta/>.

