POSTHUMAN CAPITAL: NEOLIBERALISM, TELEMATICS, AND THE PROJECT OF SELF-CONTROL

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

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2014

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Abstract

The goal of this dissertation is to demonstrate some of the ways in which neoliberal social and economic discourse, in particular the work of Friedrich Hayek and Gary Becker, has influenced the cultural evolution of the late-twentieth and early-twenty-first centuries. Chapter One introduces the scope and methods of the project and situates market-oriented social epistemology alongside the development of complexity theory in the physical and information sciences. Chapter Two situates Hayek’s philosophies of social science and communication within the broader science cultures of the postwar decades, arguing that his conceptualization of prices and markets is deeply rooted in coterminous projects of cybernetics and general systems theory. Consequently, Hayek’s ideas about autonomy, information, and cultural transmission are seen to dovetail with the dominant scientific paradigms and media technologies of the late twentieth century. Chapter Three argues that contemporary financial markets and telematic screen cultures have become operationally analogous in their actualization of neoliberal rationality and social thought. Expanding my reading of neoliberalism beyond Hayek’s macrological approach to examine the emerging and all-consuming micrological approach of “human capital” theorists like Becker, this chapter details the ways in which new media platforms, algorithmic cultural practices, and what cultural critics have named the “financialization of daily life” have become primary agents of governmentality today. Chapter Four offers an original interpretation of Michel Foucault’s 1979 lectures on neoliberalism, one that reads the abrupt change of course in his
research—which, directly following his interrogations of Hayek, Becker, and others, jumped from contemporary political economy to ancient cultures of self-care—as an attempt to locate a genealogical precedent for the subjectivist governmental rationality he had revealed as a dominant theme of neoliberal discourse.
DEDICATION

To N.S. and F.M.
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FIELDS OF STUDY

Major Field: Comparative Studies

Media Studies

Cultural Studies

Social Theory

Political Economy
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INTRODUCTION

In 1948, Warren Weaver, a pioneering communications theorist and science administrator with side interests in the nascent meta-science of cybernetics, published an essay titled “Science and Complexity,” which explicitly thematized, for the first time, this inestimably important concept. Setting out to articulate the wide-ranging ramifications that thinking in terms of complex systems would have for science and society, Weaver’s paper functioned both as a précis of problems that remained unsolved by current mathematical and statistical techniques as well as a program for the next half-century’s scientific research. At its heart is a delineation of three sorts of phenomena available to empirical investigation: “simple” phenomena amenable to classical physics’ two- and three-variable equations; “ensemble” phenomena displaying “disorganized complexity,” which statistical methods could account for in the aggregate; and “structured” phenomena displaying “organized complexity,” which involve more variables than analog calculus could handle but also exhibit unitary forms that evade the statistician’s purview.¹ These latter problems of “organized complexity,” only beginning to be grasped as such at the time of Weaver’s writing, “deal simultaneously with a sizable number of factors which are interrelated into an organic whole.”² Weaver harbored great hope that the electronic computer would facilitate a “third great advance” in the scope and methods of Western science, which, beyond the Newtonian and the statistical

¹ Weaver, “Science and Complexity.”
² Ibid., 539.
revolutions, could make headway on those theretofore intractable problems of “organized complexity”; indeed, according to Weaver, this would be something on which “the future of the world [would] depend.”

Weaver’s paper was quickly followed by a run of decisive projects, discoveries, and events. The operations researcher, management guru, and socialist-mystic cybernetician Stafford Beer was an early expositor of Weaver’s complexity heuristic, which in his work was applied mainly to problems of organization in such sprawling bureaucratic systems as states and firms. In physical chemistry, Ilya Prigogine’s discovery of “dissipative structures,” for which he was awarded a Nobel Prize, gave rise to formal descriptions of processes of “self-organization in far-from-equilibrium systems.” His findings would consequently upend the long-accepted principles of thermodynamics. Most controversially, Prigogine’s radically complex portrait of the observable world—arrived at through electronically computed nonlinear equations—stood firmly at odds with the basic epistemological and ontological premises of modern Western science. He recounts, for example, how “classical physics ha[d] emphasized stability and permanence,” whereas “[w]e now see that, at best, such a qualification applied only to very limited aspects. Wherever we look, we discover evolutionary processes leading to diversification and increasing complexity.” In short, Prigogine claims, “[O]ur vision of nature is undergoing a radical change toward the multiple, the temporal, and the complex.”

In the life sciences, in particular in cellular and molecular biology, the observation of equally complex phenomena revitalized and totally transformed inquiries into the origins and

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3 Ibid., 540-542.
4 See, e.g., Beer, Cybernetics and Management.
5 Prigogine and Nicolis, Self-Organization in Non-Equilibrium Systems, 1.
6 Prigogine and Stengers, Order Out of Chaos, 2.
nature of life. Biologist Stuart Kauffman, a founding researcher at the Santa Fe Institute and a leading proponent of this research, describes how his investigations of autocatalytic processes yielded evidence of “stunning order... without careful crafting,” metabolic organizations “randomly assembled, unguided by any intelligence.” Pursuant to those findings, the century-old Darwinian paradigm was not so much overturned as stood on its head by growing evidence that the emergence of supposedly random mutations were actually governed by abstract laws just beyond the ambit of current scientific tools and techniques.

Some six decades after Weaver’s visionary essay, in our age of ubiquitous computing and “real-time” global telecommunications, we find ourselves immersed in complex systems virtually everywhere we turn. And not only have computers aided in solving complex problems already on the books; beyond anything Weaver could have imagined, they have exposed new problems and new types of problems that would have otherwise never been registered. Going further still, I argue below that today’s telematic media systems, upon which human life has become increasingly dependent, actually produce new problems, specifically with regard to the complexifications of society, economy, and sense of self.

There exists a discourse particularly well poised to address these new problems, one that developed alongside that of cybernetics and complexity science and one that remains every bit as radical in its disputation with traditional modes of thought. This is the discourse of neoliberal governmentality, a pointed explication of which lies at the heart of my project.

Friedrich Hayek’s social epistemology provides an important foundation for the neoliberal turn in political economic discourse. Throughout his long career, Hayek remained

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7 *At Home in the Universe*, 83.
8 See, e.g., ibid., 183–186.
keenly attuned to evolving research paradigms in the natural sciences, to mathematical
advances ushered in by electronic computation, and so too to the need to reconfigure the
classical terms and analytical methods of the liberal arts and so-called “sciences of man.”

That Hayek’s thought has been so severely reduced to his “political book,” *The Road
to Serfdom*, is something of a minor tragedy of modern intellectual history. In the rush to
either celebrate or vilify Hayek for his role as a lead architect of the policy prerogatives of
Thatcherism and Reaganomics, latter-day commentators have not only expunged the nuance
and ambiguity of his political program, but, more problematically still, they have effectively
screened out those findings in the philosophy of science that led him to idealize market-
based techniques of social regulation in the first place.

Vital to Hayek’s theorization of the market and to his social science methodology is
an appreciation for the power of that which remains just beyond the grasp of science, an
appreciation for the complex mechanisms and abstract rules that generate spontaneous
orders and even entire social institutions without human design or interference. By situating
Hayek alongside some of the premiere figures of the midcentury scientific vanguard, I aim
not to vindicate his thought so much as to squarely undermine his prevailing image as an
unyielding free-marketeer single-mindedly committed to limiting the size and scope of the
state. His many exchanges with cyberneticists, systems theorists, evolutionary biologists,
cognitive psychologists, and other forerunners to the new science of complexity significantly
bolstered his longstanding, albeit little understood, reproach of classical laissez-faire
liberalism—that strain of political economy that began with Adam Smith and which, as
Hayek saw it, “failed to cope adequately with new problems” resulting from increasingly intricate social arrangements and accelerated rates of diversification and growth.⁹

To set the stage for the chapters that follow, we should preliminarily highlight three core features of Hayek’s thought. First, Hayek dramatically reconceptualized the economy as a multilateral communication system, or an all-purpose information processor, as opposed to a site of competition and exchange. Second, he understood individuals to observe, make sense of, and conduct themselves in the world in accordance with slowly evolving “abstract rules,” basically algorithms, which those individuals need not even know they are following. Third, he held that, from the reiterative processing of such simple and locally bounded rules over the course of many millennia, historically specific “spontaneous orders” emerge—self-organized and non-hierarchical social forms and institutions wherein human agents become part and parcel of the dynamic and metastable biological, physical, and technological systems with which they constantly interact. The market, of course, provided Hayek with the perfect model of such order.

All told, in concert with the nascent concepts and concomitant research programs of complexity science, Hayek directed his philosophy of science towards three distinct but interconnected problematizations. As he saw it, the progressive evolution of human civilization depended on the sustained cultivation of efficient communications media. Differentiation of cultural forms, specialization of skills and knowledge, and complexification of organizational structures would not be viable without robust networks capable of keeping things linked up, however delicately so. “[T]he… knowledge of the circumstances of which we must make use never exists in concentrated or integrated form

but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess. The economic problem of society is thus not merely a problem of how to allocate ‘given’ resources… [but] a problem of the utilization of knowledge which is not given to anyone in its totality.”

If the capitalist system were to survive, Hayek wagered, it would be on account of its harnessing the most effective means for transmitting and receiving the various bits of knowledge scattered throughout the social space. In other words, it would be the facilitator of complexification. Superseding the intellectual capacity of any individual or agency, the market would prove to be a more “efficient mechanism for digesting dispersed information than any that man has deliberately designed.”

The facilitation of commodity and monetary exchange and the lubrication of competition would be secondary to the market’s newly minted function as “a kind of machinery for registering change, or a system of telecommunications which enables individual producers to watch merely the movement of a few pointers… in order to adjust their activities to changes of which they may never know more than is reflected in [a] price movement.”

Far from classical liberalism’s insistence on the strict partition of state and market domains, Hayek assigns to the government a positive and boundless task, namely, to ensure that each individual has access to whatever “information… he needs to fit his decisions into the whole pattern of changes of the larger… system.”

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11 Ibid., 87.
12 Ibid., 84.
proliferation of “many intermediaries” and the systematic distribution and undirected coordination of information, declares Hayek, “the whole acts as one.”

Stoked by the clarion call of complexity, Hayek’s radical reconfiguration of the market was meant to humble human observers and would-be agents of intervention, who in his view faced an impossibly vast, ever-changing, and unpredictable information environment. In his capacity as a social theorist, Hayek articulated his object of study as a “coherent structure… in which a complex pattern has produced properties which make self-maintaining the structure showing.” Tautological as this sounds, Hayek’s formulation captures precisely the spirit of latter-day complexity theory. The philosopher of science Isabel Stengers, for example, who closely collaborated with Prigogine, argues that, with the articulation of complexity, “it is the notion of a vision of the world, from the point of view of which a general and unifying discourse can be held, that in one way or another must be called into question.” By positing the organized whole as something utterly inaccessible to any isolated act of observation, Stengers thus confirms the affinity between the natural scientist’s “vision” of complexity and the radical subjectivism that had been Hayek’s methodological calling card since the early 1940s.

In his frequent attacks on the welfare state’s “universal demand for ‘conscious control or direction of social processes,’” Hayek was fond of citing the philosopher and mathematician Alfred North Whitehead’s remark about how “civilization advances by extending the number of important operations we can perform without thinking about

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13 Ibid., 86, emphasis added.
14 Hayek, Studies, 27.
15 Stengers, Power and Invention, 5.
them.”\textsuperscript{16} For Hayek, this principal of the “primacy of the abstract” and the “non-conscious” was meant to cover complex phenomena at all possible scales—from rules governing what wave frequencies an animal is able to process optically to rules for breathing and blinking to rules for deciding at what price to buy a given commodity. From the mind to the market, an abstract rule would be in effect “whenever a type of situation evolves in an individual a disposition toward a certain pattern of response.”\textsuperscript{17} In the aggregate, such abstract rules would generate what the complexity theorists name “order from chaos,” surprising and self-organizing forms capable of “preserv[ing] [themselves] throughout a process of change.”\textsuperscript{18}

At the heart of the Hayekian project lies a fundamental belief that “the spontaneous interplay of social forces sometimes solves problems no individual mind could consciously solve, or perhaps even perceive […] thereby creat[ing] an ordered structure which increases the power of the individuals without having been designed by any one of them.”\textsuperscript{19} In his work, the capitalist price system, considered as an emergent and ever-evolving social institution, provides the \textit{ur}-form for other complex phenomena, with the economist-cum-social theorist modeling the experimental methods and epistemological principles of more recent thinkers of complexity like Prigogine and Kauffman. Interestingly, we find echoes of this point in Kauffman’s own writing, when he examines “the persistently innovative econosphere” as “an outgrowth” of the biosphere—“both built by communities of autonomous agents in their urgent plunging, lunging, sliding, gliding, hiding, trading, and providing.”\textsuperscript{20} “Neither the biosphere nor the econosphere,” Kauffman writes, “are merely about the distribution of limited resources, both are expressions of the immense creativity of

\textsuperscript{17} Hayek, \textit{Law, Legislation, and Liberty, Volume 1}, 30.
\textsuperscript{18} Hayek, \textit{New Studies}, 183–184.
\textsuperscript{19} Hayek, \textit{The Counter-revolution of Science}, 87.
\textsuperscript{20} Kauffman, \textit{Investigations}, 211–212.
the universe… ever-expanding web[s] of diverse complexity.” Once the complexity of their respective fields of study is established, economics and biology, in Kauffman’s view, become less about understanding particular things and more about creating optimal conditions for this “universal creativity” to flourish. Importantly, the observer in this scenario does not bring anything under control; rather, her task is to control for (this or that variable, this or that pattern, this or that rule). She thereby allows emergent orders to most effectively function as immanent regulators of their own reproductive processes—a model neoliberal governor, controlling without ever appearing to be, as it were, “at the controls.”

So it is that, with the growing importance of complexity in the science lab, we can discern something like the becoming-social of the natural sciences. This sets the stage for the recontextualization of neoliberalism I undertake in Chapter Two, where I turn to theories of posthumanism and the figure of the posthuman in cultural history and the philosophy of science. I inflect these discourses with an eye towards crafting an original theory of the rise of “the posthuman sciences,” in which Hayek, insofar as he successfully taps into a series of influential developments in midcentury science, plays a pivotal role.

After establishing this epistemic arc of neoliberal culture, I examine some of the ways in which neoliberal ideas about selfhood and society have become actualized in recent decades through networks of new media and networks of financial capitalism. In his 1997 essay “Culture and Finance Capital,” Fredric Jameson argues that “any comprehensive new theory of finance capitalism will need to reach out into the expanded realm of cultural

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21 Ibid., 212.
production to map its effects.”22 While I hardly disagree on this point, I also hold the inverse to be equally apt—that our theories of contemporary media and culture must take stock of the points of correspondence between those forms and practices and the novel techniques of “financialized” capitalism in the twenty-first century. Having established a sense for the posthuman as an object of science in Chapter Two, Chapter Three explores the myriad ways in which the posthuman—here considered as a subject of power—circulates through the information and communications systems that are coming to mediate evermore aspects of everyday social and economic life. This inquiry takes a double tack in illustrating the cultural actualization of neoliberal thought, passing through the recent history of financial derivatives, then observing a series of new media practices that appear to model Hayekian strategies of algorithmic control.

The critical cultural and media analyses in this third chapter ultimately turn on a rearticulation of the Chicago economist Gary Becker’s theory of human capital, which considers the individual as a site of investments, a source of rent extraction, and an enterprise unto herself. Taking in turn Hayek’s macro-level market theory and Becker’s micrological approach to behavior and choice, I argue that ubiquitous, mobile, networked computing has come to function as the neoliberal medium par excellence. With this I hope to supply something of a critique of the predominant mode of critique of contemporary capitalism—that is, an attempt to push the critique of neoliberalism past the usual touchstones of deregulation, outsourcing, immaterial labor, militarism, upward redistribution, and debt. Beyond the Chicago Boys’ “Chilean miracle,” beyond the monetarists’ victory over 1970s-era “stagflation,” beyond Thatcher’s monomaniacal privatizations and the aggressive

anti-regulatory policies of the Reagan and Clinton administrations: The great triumph of neoliberalism actually occurs by virtue of its irrevocable fixity within the communications revolution, that series of technical advances that took us from the rotary telephone and the room-sized mainframe computer through the microchip and integrated circuit all the way to Web 2.0 and 3.0 in precisely the time that it took derivatives markets to realize new heights of “organized complexity” once non-linear equations were developed to model their prices.

So on one hand, my project is an attempt to think the relationship between culture and capital anew, specifically as a relationship between neoliberal governmentality and telematic media practices. On another hand, it offers a three-part theoretical intervention in the scholarly discourse on Michel Foucault. Towards the end of his career, Foucault frequently referred to three major phases of research he had carried out over the years: the first dealing with the production of the subject as an object of science; the second dealing with the production of the subject as a target of power; and the third dealing with the production of the subject as a series of techniques one applies to oneself.²³ It is only in the fourth and final chapter that the integrality of this Foucauldian—or rather meta-Foucauldian—theme becomes clear. Whereas Chapter Two observes the posthuman-neoliberal subject along the axis of knowledge, and Chapter Three does so along the axis of power, Chapter Four reconsiders this figure through the lens of Foucault’s late research into Greco-Roman discourses on the cultivation of the self, which arrived, not coincidentally, on the heels of his path-breaking lecture course on neoliberalism. This final chapter, to the extent that it reveals a genealogy of the posthuman capitalist some two-thousand years in the

²³ See, e.g., Foucault, *Ethics*, 262–263.
making, provides something of a coda to the previous two at the same time as it turns their claims that the historical specificity of neoliberal culture upside down.
We flatter ourselves undeservedly if we represent human civilization as entirely the product of conscious reason or as the product of human design, or when we assume that it is necessarily in our power deliberately to recreate or to maintain what we have built without knowing what we were doing. Though our civilization is the result of an accumulation of individual knowledge, it is not by the explicit or conscious combination of all this knowledge in any individual brain, but by its embodiment in symbols which we use without understanding them, in habits and institutions, tools and concepts, that man in society is constantly able to profit from a body of knowledge neither he nor any other man completely possesses. Many of the greatest things man has achieved are not the result of consciously directed thought, and still less the product of a deliberately coordinated effort of many individuals, but of a process in which the individual plays a part which he can never fully understand. They are greater than any individual precisely because they result from the combination of knowledge more extensive than a single mind can master.

—Friedrich Hayek, “Scientism and the Study of Science”

We are only beginning to understand on how subtle a communication system the functioning of an advanced industrial society is based—a communication system which we call the market and which turns out to be a more efficient mechanism for digesting dispersed information than any that man has deliberately designed.

—Friedrich Hayek, “The Pretense of Knowledge”

This chapter considers the development of Friedrich Hayek’s social theory and epistemology, from just before World War II through the late-1970s, alongside the emergence and evolution of what I will here define as the posthuman sciences. This term is meant, first, to invoke the oft-cited closing paragraphs of Foucault’s The Order of Things, wherein the author “wagers” that “man”—as both subject and object of scientific knowledge—could soon “be erased, like a face drawn in sand at the edge of the sea.”

24 Hayek, The Counter-Revolution of Science, 84.
26 Foucault, The Order of Things, 387.
Startling as it is, this conclusion follows rather logically from the book’s overarching efforts to date, and thereby render historically contingent, the birth of the human sciences and the particularly modern epistemological field that had precipitated their rise. In Foucault’s summation, the appearance of “the figure of man… was not the liberation of an old anxiety, the transition into luminous consciousness of an age-old concern, the entry into objectivity of something that had long remained trapped within beliefs and philosophies: it was the effect of a change in the fundamental arrangements of knowledge. As the archeology of our thought easily shows, man is an invention of recent date. And one perhaps nearing its end.”

Foucault’s “wager” has served as a vital philosophical impetus for posthumanist thought in recent decades. I would like first to recount some exemplary articulations of this posthumanism as it has appeared in science and technology studies and critical, cultural, and social theory. Then, I will return to Foucault’s archaeology of the disciplines in order to sketch an original theory of the posthuman sciences, which will appear distinct from, but not uncomplimentary with, existing posthumanisms. Against this backdrop, Hayek’s writings on epistemology and the philosophy of science, which have been significantly overshadowed by his political and legal theory, will reveal a deep-seated confluence between neoliberal governmentality and the posthuman sciences. This assessment of what we might, borrowing from Foucault, label a “general redistribution of the episteme,” or a redrawn “grid of intelligibility,” will supply the bedrock for subsequent chapters’ analyses of screenic and algorithmic cultures, the hegemony of financial capital, and the subjectivization practices of Human Capital Theory’s “self-entrepreneur.”

27 Ibid., 386-7; see also xxiv.
28 Foucault, The Order of Things, 345.
I. The Problem of Neoliberalism

That the phenomenon of neoliberalization is first and foremost an attempt to rethink the field of social knowledge and its optimal utilization. The failure, on the part of its critics, to understand this starting point has allowed neoliberal concepts and practices to become deeply—and imperceptibly—entrenched in everyday life.

Hayek’s arrival in Chicago in 1950, six years after the stateside publication of his now-notorious “political book,” *The Road to Serfdom*, catalyzed a veritable paradigm shift in bourgeois economic thought. With Hayek as its guiding light, American neoliberalism would recast the economic subject as veritably posthuman at the same time as it would reconceive economics itself as the vanguard discipline of the new posthuman sciences. Of course, these terms never appear as such in this discourse of postwar political economy, so it will be my task here to draw them out and make evident the multiple points of complementarity and collaboration between the new market-oriented social theory, starting with Hayek, and the informatic and biological systems sciences that have become most closely associated with the posthuman turn.

Hayek’s legacy, especially in the United States and Great Britain, has been somewhat misleadingly pegged to the unequivocal success of his political treatises, which zealously celebrate, at least on the surface, the triumphs of individual liberty and free enterprise. This

29 Attempting to correct this misconception, Juliet Williams, for example, highlights the apparent irreconcilability between Hayek’s avowed political commitments and his actual philosophy of liberalism. “By reading Hayek through the lens of the welfarist/libertarian debate,” as he is indeed so often read, “acolytes and antagonists alike have seriously misunderstood his contribution to liberal theory. Although Hayek has been portrayed as a libertarian fundamentalist, throughout his career he adopted a far more nuanced and far less severe position than most commentators appreciate… Regrettably, critics largely have failed to appreciate Hayek’s willingness to consider alternatives to laissez-faire policies, assuming that in his philosophical writings Hayek sought to justify his political preferences.” “In the end,” Williams concludes, “Hayekian liberalism proves itself to have but a contingent relationship with capitalism, while being married—for better and for worse—to the democratic ideal” (Williams, “The Road Less Traveled, 213–227). While I do not fully endorse Williams’ conclusion about Hayek and democracy, I nevertheless find her research vitally important to my own attempt to set the record straight concerning the chasm between laissez-faire dogmatism and Hayek’s own liberal principles. Reading Hayek’s political books, especially the later and more elaborate volumes, one quickly observes (a) that any government whatsoever always already exists on the much decried slippery slope to
has resulted in two fundamental problems: First, because so much of what has been written about Hayek’s political philosophy comes off as either hagiography or villainization, his actual, original thoughts about the role of markets with respect to society—and of states with respect to markets—tend to get obscured. Second, again owing mainly to the partisan predispositions of its most vocal commentators, there has been little effort to understand the underlying epistemological and socio-ontological platform from which Hayek’s political philosophy springs forth. My present aim is not to rescue Hayek from such blunt polemical readings but to point up those areas in which his work has been more subtly influential, or where it has penetrated into the core existential categories of digital everydayness. This way, we will be better equipped to discern the diffuse actualization of neoliberal market logics today, which is to discern too the fuller scope of the political ills plaguing the global socius of postmodern capitalism.

For several decades following the publication and immense popular success of *Road to Serfdom*, academia tended to ignore Hayek as much as possible. Initially, Keynesian solutions to the domestic and international concerns of the postwar world promised stability...
and prosperity for the foreseeable future. Even after the onset of neoliberal revolution in the 1970s and ‘80s, after the mainstreaming of Thatcherite and Reaganite agendas and the steady seizure of governmental functions by multinational corporations, Hayek’s peripheral station at the University of Chicago’s Committee on Social Thought led most economic historians to overlook his contributions to the formation of the Chicago School’s postwar ideology, which was more often understood as the brainchild of lifelong economists like Milton Friedman, George Stigler, Gary Becker, and Eugene Fama. Only recently has Hayek’s pivotal role in the formation of a number of extra- or para-academic social networks like the Mont Pelerin Society been more closely scrutinized. But even their revised narratives, welcome as they have been, stop short of addressing the extent to which Hayekian concepts and ideas have come to permeate the contemporary cultural and scientific landscape. My overarching hope is that a better handle on the epistemological and methodological foundations of Hayek’s social thought will prove a handy prerequisite to making better sense of—and perhaps more successful challenges to—his “truly” individualist, “truly” liberal political program.

II. TOWARDS A THEORY OF THE POSTHUMAN SCIENCES

That the articulation of neoliberal economics and social theory—in conjunction with the coterminous appearance of a profuse discourse on information, communication, networks, and artificial intelligence—heralds a revolutionary phase in the history of thought, a fundamental departure from modern knowledge, its invention of the human, and its methodological orientation around norms, rules, and systems.

31 Even a monograph dedicated to the major figures of Chicago School Economics, by Belgian economist Johan Van Overtveldt, has but a scant few pages dedicated to Hayek, and this not to his economic and social theory but to his later political and legal philosophy (Van Overtveldt, The Chicago School, PN). Socialist democrats and other prominent critics on the left have typically gone along with this standard narrative of American neoliberalism. See, e.g., Klein, The Shock Doctrine.

32 For example, by philosopher of science Philip Mirowski (in Mirowski and Plehwe, The Road From Mont Pelerin); historian Angus Burgin (in Burgin, The Great Persuasion); and the political geographer Jamie Peck (in Peck, Constructions of Neoliberal Reason).
Hayek’s work serves as a cornerstone in the development of what I am here calling the posthuman sciences. His methodological subjectivism and his focus on systemic problems of communication in increasingly complex social environments presciently captures the attitude and approach characteristic of much contemporary research into the posthuman. For Foucault, the human sciences emerged to study the sort of subjectivity produced by the modern disciplines of biology, political economy, and general grammar, whose “new empiricities” or “positivities” of life, labor, and language, respectively, became the concepts through which “man” was originally rendered as an object of knowledge. When those positivities began “speaking back” to their human interrogators, demanding further epistemological abstraction, the human sciences proper—psychology, sociology, and the study of literature and myth—finally appeared. These fields direct themselves “towards that which, outside man, makes it possible to know, with a positive knowledge, that which is given to or eludes his consciousness.”

There is an undeniable recursivity that circumscribes the whole project of the human sciences (which we will see echoed in curious ways throughout Hayek’s work). Foucault summarizes, “The human sciences are not… an analysis of what man is by nature; but rather an analysis that extends from what man is in his positivity (living, speaking, laboring being) to what enables this same being to know (or seek to know) what life is, in what the essence of labor and its laws consist, and in what way he is

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33 “Before the end of the eighteenth century,” Foucault asserts, “man did not exist… [T]here was no epistemological consciousness of man as such. The Classical episteme is articulated along lines that do not isolate in any way a specific domain proper to man… [T]he very concept of human nature, and the way in which it functioned, excluded any possibility of a Classical science of man” (Foucault, The Order of Things, 308–309).

34 Ibid., 378.
able to speak. The human sciences thus occupy the distance that separates... biology, economics, and philology from that which gives them possibility in the very being of man.”

In the wake of Foucault, my contention is that we have witnessed the arrival of a new paradigm for knowledge, which sets the human aside in favor of a posthuman object of study and a posthumanist mode of investigation. A constellation of posthuman sciences has erupted in the wake of a series of challenges presented by cybernetics and the renewed project of establishing a “physical basis for life.” The old empiricities of life, labor, and language have been deprioritized, as more abstract entities establish themselves as objects of empirical investigation—cellular automata, the abstruse instruments of high finance, or the coding protocols underpinning the World Wide Web. Newer empiricities of artificial life, networks, and communications, in turn, give rise to new modes of knowledge, new disciplines that arise out of the encounter, mediated by those new empiricities, between posthuman object and posthumanist subject. At the same time, the old empirical sciences themselves become radically reimagined. “A new biology,” according to philosopher Georges Canguilhem, takes shape around “new[ly] invented... scientific objects” described as “superreal” and “non-natural,” “product[s] of considerable technical and theoretical labor.”

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35 Ibid., 353. Further on, Foucault underscores the important fact that the human sciences extend beyond the simple elements of life, labor, and language. “A ‘human science’ exists,” he claims, “not wherever man is in question, but wherever there is analysis—within the dimension proper to the unconscious—of norms, rules, and signifying totalities which unveil to consciousness the conditions of its forms and contents” (Ibid., 364). Below, we will see Hayek’s revamped conception of the market as an interesting manifestation of such a “signifying totality”; significantly, however, for Hayek the market process can never be fully “unveiled,” and this latency or tacitness is part of what will push us to consider neoliberalism as a distinctively posthuman science.


onto a whole “new view of the world.” Elsewhere, an “immeasurable extension and deepening... of the microeconomic perspective” has, in the words of Henri Lepage, “revolutionized” the study of human interaction and “spiked” traditional left-wing criticisms of capitalist society. No longer confined to rote “analysis of price formation in a market economy,” microeconomics, in the wake of Chicago School innovators like Gary Becker, “is now conceived much more widely, as a general theory of human choice and behavior in a system of social interactions.” Finally, as vehicles for meaningful communication become progressively abstract—from speech through writing, radio, and television and towards a perfectly “unambiguous” and optimally efficient “universal” code—theorists of language, such as the physicist-philosopher Carl Friedrich von Weizsäcker, have for half a century been able ask whether “language [can] be completely transformed into information.”

From our early twenty-first century vantage point, we can see how each of the paradigmatic human sciences has become reorganized and remediated according to the dicta of the emergent episteme. Psychology has been fundamentally transformed by the methods and mentalities of cognitive biology and neurophysiology, some of which we will pursue in the next chapter. Sociology has been unequivocally altered, if not by the neoliberal economists, then by the theorists of actor-networks, whose epistemology and ontology have much in common with their market-oriented counterparts, as we will see in the final sections of this chapter. The study of literature and myth, likewise, have begun to be superseded by research into comparative media systems, which we will address presently. Though we will take pains to avoid appearing overly schematic in our assessment, we will nonetheless

38 Ibid., 118.
39 Lepage, Tomorrow, Capitalism, 5, 19.
40 Ibid., 19.
proceed to investigate the posthuman sciences through these three exemplary fields, oriented around problems of cognition, networks, and media or communications systems, respectively. Recalling Foucault’s metaphor, we can affirm that the tide has indeed risen and, as it recedes again, we can begin to make out a new image etched in the sand; this chapter is an attempt to understand what that image is. In the section that follows, I trace the emergence and development of a posthumanist discourse, make clear its orientation around a particular history of cybernetics, and articulate some of the ways in which my approach to the question of the posthuman—by way of a politically entrenched philosophy of science and disciplines, or what Foucault called a “history of thought”42—differs from those currently circulating in science studies, cultural studies, and critical theory.

I take Hayek to be an early and rather farsighted exponent of this posthuman turn in the field of knowledge and see important but overlooked affinities between his project and certain exemplary inquiries in the posthuman sciences. We will observe evidence of such affinities in recent work in comparative media studies as well as cognitive science. We will also see how actor-network theory, as the posthumanistic extension of sociology, reveals itself to be equally apposite to and accommodating of the overarching trajectory of neoliberal thought. In many ways, Hayek’s project serves as but one case among others. At the same time, however, because the real effects of neoliberal thinking have, over the past

42 Foucault distinguishes between the “history of ideas” and the “history of thought.” The latter, he proposes, can be understood as an attempt “to analyze the way institutions, practices, habits, and behavior become a problem for people who behave in specific sorts of ways, who have certain types of habits, who engage in certain kinds of practices, and who put to work specific kinds of institutions… The history of thought is the analysis of the way an unproblematic field of experience, or a set of practices, which were accepted without question, which were familiar and ‘silent,’ out of discussion, becomes a problem, raises discussion and debate, incites new reactions, and induces a crisis… [it] is the history of the way people begin to take care of something, of the way they become anxious about this or that” (Pearson, Fearless Speech, 74). Along these lines, I hope to show how the figure of the posthuman emerges, in conjunction with a particular reconfiguration of markets and mediality, as a problem, that is, as something to be governed (to use terms that become especially important in subsequent chapters).
several decades, proven to be so devastating and barbarous and inhumane, situating Hayek alongside the pantheon of posthumanists and theorists of the posthumanities would seem to problematize many aspects of that project. Over the course of this and subsequent chapters, I ultimately hope to demonstrate an inexorable link between the governmentality that follows from Hayek’s social epistemology, the ubiquitous applications and routines of telematic media cultures, and the core concepts and methods of posthumanistic research.

As our critical entry point into this contemporary constellation of power, technics, and systems of knowledge, observe how Hayek comes to articulate the study of markets as, at bottom, a study of media, and how cannily the trajectory of catallactics corresponds to the broader reorientation of postwar science around tropes of complexity, uncertainty, instability, and self-organizing structures. In classical political economy, the market operated as a clockwork machine, coupling producers and consumers in the name of harmonizing a socius otherwise bent towards violent conflict. The task of the political economist, in turn, was to discover those unchanging laws, executed by Smith’s famed “invisible hand,” through which free competition yielded relatively stable prices and balanced supply and demand. According to liberal orthodoxy, the more precision could be achieved in formulating those laws of the market, the stronger the case would be against state interference, since the market, like the cosmos, was thought to be a natural phenomenon in need of no meddling once set into motion.

By the middle of the twentieth century, Hayek and other avowed “old-style” liberals (whom we now recognize as neoliberals avant la lettre) had all but abandoned that classical

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43 Just as Marshall McLuhan, for example, sets in motion a line of research that would eventually be institutionalized as media studies.
44 The market actor was thought to exhibit an equally mechanical rationality and drive. In Chapter Three, we will witness neoliberalism’s radical overhaul, in the form of Human Capital Theory, of this aspect of traditional political-economic thought.
understanding of the meaning of markets and their spheres of operation vis-à-vis civil society and the state. Science and technology had remade, or at least reimagined, the Western world in ways that would have been impossible for the *laissez-faire* apologist to grasp. Sharing this recognition, many neoclassically-inclined political economists of the early- and mid-twentieth century sought to deploy statistical methods to counteract the market’s inevitable uncertainties and expanding propagation of risk. But it would become Hayek’s prerogative to theorize a science of markets and a set of “abstract rules” for political intervention commensurate with the institutional and cultural realities of this exceedingly complex postwar world. To return to the terms of information theory pioneer Warren Weaver, which we took up in the Introduction, we can think of classical *laissez-faire* economists as posing a relatively simple problem; the problem for neoclassical and Keynesian interventionists is one of “disorganized” but statistically rectifiable complexity; while, for the neoliberals, the problem is the richer and much more difficult one of “organized complexity.”

In Hayek’s work, the market arrives as a neat solution to a novel problem in social epistemology. The swift advancement and diffuse proliferation of knowledge among individuals, in many ways effects of nineteenth-century technologies that rapidly made the world a much smaller place, required a dependable network of mediators and relays in order to maintain optimal utility and accuracy. A price, to the neoliberal, is thus neither a measure

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45 Weaver, “Science and Complexity.” This transposition of Weaver’s terms might at first appear somewhat suspect, as it downplays the presumably chaotic nature of the *laissez-faire* socius as well as the seeming crudity of the typical neoclassical and Keynesian techniques of intervention. To the first point, I contend that classical *laissez-faire* policies in fact yielded a rigidly ordered society, methodically operated by the largest industries and industrialists of the era, acting as if the market mechanism were a more or less “simple” machine. Mumford’s depiction of the “Paleotechnic” nineteenth century provides ample support here. His *Technics and Civilization* offers a stark look at life in mining towns, factory towns, and elsewhere, leading to a blistering critique of the sort of “machinic” thinking that quantifies all aspects of human labor and time so that they may be added together and geared to the needs of some task of mass production (Mumford, *Technics and Civilization*). To the second point, I will defer to my argument in Chapter Four regarding the disintegration of the biopolitical paradigm of governmentality.
of utility nor a symbol of monetary value, but an unfathomably dense “bit” of information, a compact index of all that unarticulated, non-totalizable knowledge circulating among social beings. The market, undergoing an equally transformative makeover, becomes a multilateral “communications system,” an all-purpose “information processor,” a veritable universal machine.

III. ON AND AROUND CYBERNETICS: CONFIGURATIONS OF THE POSTHUMAN

*That cybernetics promotes simultaneous visions of mechanized humanity and naturalized technology. The posthuman emerges as a complex cultural and philosophical instantiation of this tension, less a predetermined automaton than an ideal agent of a newly conceived practice of self-control.*

Among the early expositors of a theory of posthumanism, cultural theorists Donna Haraway and N. Katherine Hayles each locate in postwar cybernetics the principle elements for a wholesale revolution in the way modern Western science had theretofore conceived of humanity, animality, and life. For Haraway, the rupture comes by way of a new class of machines in our homes, in our factories, and on our persons. “Pre-cybernetic machines… were not self-moving, self-designing, [or] autonomous,” she says, unlike the machines of the latter half of the twentieth century, which “have made thoroughly ambiguous the difference between natural and artificial, mind and body, self-developing and externally designed… Our machines are [now] disturbingly lively, and we ourselves frighteningly inert.”

In Hayles’ historical narrative, “[f]rom Norbert Wiener on, the flow of information through feedback loops has been associated with the deconstruction of the liberal humanist subject… Although the ‘posthuman’ differs in its articulations, a common theme is the union of the

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46 Haraway, *Simians, Cyborgs and Women*, 151.
human with the intelligent machine.” Both Haraway and Hayles also implore that we go beyond any strict correlation between the concept of the posthuman and the popular images of bionic, human-machine hybrids that were in wide circulation by the mid-1980s. Instead, they argue, the rise of the posthuman should be understood as an epistemological turn, a particular point of view, or an alteration in the conditions for the production of subjectivity. For Haraway, communications technologies, alongside biotechnologies, appear as “the crucial tools recrafting our bodies. These tools embody and enforce new social relations.”

But even more important than the technologies themselves are the scientific methods underpinning their respective development. She observes a paradigm shift having taken place in the life sciences just after World War II. Therein, “organic form… gave way to systems theory based on communications networks and a logical technology in which human beings become potentially outmoded symbol-using devices.” The “Taylorite scientific management and human engineering of the person” came to be displaced by “modern ergonomics and population control.” Smuggled in, according to Haraway, predominantly through sociobiology and molecular genetics, this cyberneticization of the life sciences saturates the field with a distinctive market ideology. The “capitalist life science[s],” in short, constitute nature in terms of a “communications problem… with a logic of control appropriate to the historical conditions of post-Second World War capitalism.” This new paradigm of the “biological enterprise” overlays a logic of competition, maximal profit, and systems control onto the framework of the life sciences and articulates enterprise and

47 Hayles, How We Became Posthuman, 2.
48 Haraway, Simians, Cyborgs and Women, 164.
49 Ibid., 45.
50 As her starting point, Haraway takes the “strong case” made by sociologists that “biology has ceased to exist and… the organism has been replaced by cybernetic systems.” Ibid., 57.
51 Ibid., 58–59.
investment as motors of reproduction at both the cellular and organismic levels.

In “A Cyborg Manifesto,” Haraway charts the ways in which the cyborg has become a determining factor in medicine, work, war, sex, and beyond.\textsuperscript{52} At the end of the day, however, the “cybernetic organism”—not necessarily the thing in itself but the general, ubiquitous idea of its existence—becomes something of a prophylactic for what Haraway clearly sees as a rampant capitalist incursion into scientific thought. The figure of the cyborg, she contends, has the potential to puncture the fabric of the very patriarchal, militaristic, imperialist culture from which it originally arose. More importantly, our own cyborgization—that is, our own posthumanity—appears to Haraway as historically inevitable. “[W]e are all cyborgs,” she contends. “The cyborg is our ontology; it gives us our politics… In the traditions of ‘Western’ science and politics—the tradition of racist, male-dominated capitalism; the tradition of progress; the tradition of the appropriation of nature as resource for the productions of culture; the tradition or reproduction of the self from the reflections of the other—the relation between organism and machine has been a border war.”\textsuperscript{53} Haraway’s intervention aims to reclaim the cyborg in an effort to “imagin[e] a world without gender… without genesis… maybe also without end.”\textsuperscript{54} Equal parts myth and material reality, this transgressive figure announces the breakdown of the constitutive categorical boundaries of modern thought: boundaries between human and animal, between organism and machine, and between the physical and the non-physical.\textsuperscript{55} For Haraway and others following her posthumanist provocations, the cyborg marks a definitive break with the “order of things” that Foucault describes as having underwritten the modern episteme.

\textsuperscript{52} Ibid., 150.
\textsuperscript{53} Ibid., 150.
\textsuperscript{54} Ibid., 150.
\textsuperscript{55} Ibid., 151-53.
Haraway’s “political-fictional analysis” of cyborg ontology has held broad appeal for Marxist and anti-essentialist feminist critics. Her characterization of communication and control in the cybernetic sciences, however, seems less effectual in light of later developments in both systems theory and market-based governmentality. While “the damping and control of variation,” the “prediction of large-scale pattern,” and the maintenance of a “scientifically managed corporate capitalism” may indeed have been among the overarching prerogatives of the first wave of cybernetics’ social application, such goals appear rather foreign to the field’s subsequent development. Much as the computer, with the rise of Apple and Microsoft through the 1980s and 90s, became less of a symbol of rigid automation and hierarchical domination and more of an icon of individual empowerment and horizontal connectivity, so too had the now “second-order” cybernetic notions of system and control become infused with new concepts of flexibility, spontaneity, complexity, emergence, and uncertainty on all fronts. As we will see in the following pages, second-order systems theory, or “neocybernetics,” seeks not to “dampen” but to multiply variation, not to predict but to explain after the fact, and not to consciously direct corporate or national economies but to let loose those economies’ own endogeneous powers of creativity.

This “second-order” cybernetics, or “second-order” systems theory, developed out of longstanding debates surrounding the role of the observer in the study of teleological feedback mechanisms. Notably, its seeds were sewn long before Haraway began to stake out her retrospective ideology critique of the postwar life sciences. Already, in a 1959 symposium

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Ibid., 46.
See, e.g., Jodi Dean’s chapter “Little Brothers,” in Dean, Publicity’s Secret, which I take up again in the next chapter.
on self-organizing systems, Heinz von Foerster had contended that, in fact, “there are no such things as self-organizing systems!”—that is, at least insofar as such systems were to be conceived in isolation with respect to their environment, with which they perpetually exchange energy, and to their observers, from whom they acquire boundaries and meanings.\(^{58}\) In 1968, opening the First Annual Symposium of the American Society for Cybernetics, the anthropologist Margaret Mead, who, like von Foerster, had been a regular participant in the groundbreaking (and by now well-studied\(^ {59}\)) Macy Conferences two decades prior, called for “a cybernetics of cybernetics” in direct response to the complex social, cultural, and geopolitical challenges shaping that turbulent decade. She recounts the original cybernetic project as an attempt to craft an “ideologically neutral” language capable of bridging gaps in understanding between factional interests, such as the dominant Cold War powers of the United States and Soviet Russia. “We were impressed by the potential usefulness of a language sufficiently sophisticated to be used to solve complex human problems, and sufficiently abstract to make it possible to cross disciplinary boundaries.”\(^ {60}\)

This project, Mead admits, ultimately failed; nowhere was this failure more palpable than in the encounter between the systems theorists and the cultural radicals of the 1960s, “groups of young people whose only goal was to disrupt… all… establishments, even the ones they had themselves created a few hours or a day ago. Previously schematizable ways of

\(^{58}\) Von Foerster, “On Self-Organizing Systems and Their Environments,” 31. C.f. Ibid. 34: “… the nonsensicality of the conception of an isolated self-organizing system.” For reasons that will become evident going forward, we should point out how uncannily von Foerster’s pronouncement anticipates Jacques Derrida’s famous declaration of the end of structuralism during the very conference that was meant to announce its arrival in the United States.

\(^{59}\) On the history of the Macy Conferences, which in no small way bore responsibility for the consolidation of the early cybernetic movement, see especially Heims, The Cybernetic Group and Hayles, How We Became Posthuman.

\(^{60}\) Von Foerster, Purposive Systems, 4.
communicating were ineffective with them."\textsuperscript{61} In sum, this thorny new cultural mélange made Cold War politics “look like a game of checkers.”\textsuperscript{62}

For Mead, establishing a “cybernetics of cybernetics” essentially meant rethinking the movement from the ground up, the founding task of the nascent American Society for Cybernetics. The philosopher David Hawkins, closing that same 1968 meeting, set about this task by forging a thoroughly revamped theory of “purpose,” a focal concept of feedback and control theory. In the early 1940s, Wiener, with his collaborators Arturo Rosenbleuth and Julian Bigelow, launched the new interdisciplinary science of communication and control with an eye towards a taxonomy of purposeful behaviors. They defined such purposeful action as being guided by an “awareness” of a “specific final condition toward which the movement of the [system] strives.”\textsuperscript{63} By the late 1960s, however, as idealistic urban planning came under attack by a variety of countercultural movements, the requisite of conscious intent described by Wiener and others began to seem increasingly untenable. If cybernetics was to maintain its relevance, Hawkins contended, “purpose” could no longer be thought of in terms of “contemporary society[’s]… dominant principle of design” but rather in terms of a “counterideal of eolithism.”\textsuperscript{64} Eoliths, he explained, are pieces of chipped flint once thought to be among the earliest artifacts of hominid existence. Drawing on work going back to the 1930s, Hawkins described how these “tools” had in fact been shaped by natural processes of glaciation and stumbled upon by our distant ancestors “ready-made.” Citing an essay by an obscure German-American “engineer-novelist” named Hans Storm, Hawkins draws from the story of the eolith a lesson in the value of non-intentional teleology. In traditional

\textsuperscript{61} Ibid., 8.
\textsuperscript{62} Ibid., 8.
\textsuperscript{63} Wiener, Rosenbleuth, and Bigelow. \textit{Philosophy of Science}, 10, 19.
\textsuperscript{64} Von Foerster, \textit{Purposive Systems}, 166, 171.
design, “once you have [the] goal, all action becomes instrumental.” The “eolithic craftsman,” by contrast, follows “purposes [which] are not intrinsically stable and are subject to perturbation.” In other words, the eolithic craftsman “is responsive to the suggestions of the heterogeneous and varied nature of his materials when the structure to be fashioned is not a bridge or tower but the individual life, or society’s life.”

For Hawkins, as for Mead and von Foerster and all the other progenitors of cybernetics’ second wave, the fate of their “universal science” lay not with communication and computation technologies per se, but with, in Mead’s words, a “way of looking at things and… [a] language for expressing what one sees” specific to this new age of technological breakthrough and cultural upheaval. The work of Mead, von Foerster, and Hawkins shows how cybernetic discourse itself, just a decade or two after its first appearance, began opening up to viewpoints that were explicitly pivoting away from its command-and-control oriented mainstream. Andrew Pickering identifies comparable themes running through cybernetics from the very start. In his recent revisionist history of the movement, which shifts our attention from the U.S. to the U.K. and foregrounds cybernetics’ psychiatric and neurophysiological origins rather than its militaristic and engineering ones, Pickering outlines “two [distinct] senses of ‘control’” developing coterminously since the 1940s. “The critics’ sense… is that of a hierarchical, linear… power that flows in just one direction in the form of instructions for action.” “[T]he cybernetic sense of ‘control’” that Pickering wants to affirm “was not like that. Instead, in line with its ontology of unknowability and becoming, the cybernetic sense of control was rather one of getting along with, coping with, even taking

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65 Ibid., 170-73
advantage of and enjoying, a world that one cannot push around in that way.”

This is all to say that, well before posthumanist themes made their way into cultural theory in the early 1990s, cyberneticians themselves had largely abandoned those objects and methods that their critics would most vituperatively attack. Haraway’s “Cyborg Manifesto,” for example, offers brilliant and early insight into the convergence of communications and biological sciences as well as the capitalist exploitation of language and life made possible by postmodern technoscience, but it also harbors a sense of control as an “instrumental” technique of conscious “domination.” In the end, Haraway’s cyborg—“the illegitimate offspring of militarism and patriarchal capitalism”—appears as but a more explicitly politicized version of the posthuman subject that certain cyberneticians had long had in view. In light of what Pickering describes as cybernetics’ “nonmodern, nondualist ontology,” which we will soon see to be in concert with the radical marketology of Hayekian neoliberalism, the “monstrousness” that Haraway celebrates as a key to undermining the capitalist system must be grasped instead as an aspect of everydayness that the system has already absorbed.

In How We Became Posthuman, Hayles presents a more nuanced, heterogeneous picture of the postwar cybernetic milieu and its subsequent turns in biology, science-fiction, and computer science. While Hayles retains much of Haraway’s anti-humanist and feminist critiques of militarism and patriarchy, her genealogy also seeks to reveal and vindicate a series of actors and ideas that became marginalized as “information lost its body” in the

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68 Haraway, Simians, Cyborgs and Women, 151.
69 Pickering, The Cybernetic Brain, 18.
70 For confirmation of this notion that a certain sort of “monstrousness” has become integral to the operations of neoliberal capital, we can point, for example, to the spate of recent books and articles on “zombie capitalism.” Judging by his metaphors, Marx himself seems to have well understood this concept, as David McNally clearly demonstrates in McNally, Monsters of the Market.
second half of the twentieth century. Hayles echoes Mead in relating the story of the posthuman as a story about the

triumph of a particular “point of view.” This point of view, Hayles argues, “configures human being so that it can be seamlessly articulated with intelligent machines.” For her, the posthuman is an epistemological artifact rather than an ontological function, a mode of seeing and saying rather than exclusively a mode of being. Hayles highlights the many ways in which this posthuman epistemology, in its various stages of development, has managed to simultaneously denigrate humanity and double down on the presumed solidity of the humanist subject. But she also charts an alternative history of the posthuman, locating sites for seeing and thinking posthumanism otherwise. In so doing, she makes plain the fact that the “seamless articulation” of human and machine—or of communications technology and life sciences—need not amount to techno-determinism, perfectly calculable rationality, or unbending social control.

Hayles’ book thus offers an antidote to cyberneticization derived from the fringes of that very same phenomenon. Her narrative unfolds in an almost dialectical manner. The debates of first-wave cybernetics, roughly taking place from 1945 to 1960, privileged information over meaning and neurological networks over embodied materiality; the result was a vision of the posthuman subject that was especially conducive to the prerogatives of the engineers and mathematicians among the attendees of the annual Macy Conferences, which supplied the funding and the logistical support that made postwar cybernetics as a movement possible. Questions of meaning and materiality would resurface only in the second wave, which, as noted above, centered on the problem of the observer and the

71 Hayles, How We Became Posthuman, 2.
72 Ibid., 2-3.
elaboration of a workable concept of reflexivity.

It was in the wake of cyberneticians like Mead and von Foerster that the theory of “autopoietic systems” emerged, first enumerated by the Chilean biologists Humberto Maturana and Francisco Varela. “Autopoiesis” would quickly become one of the arch-concepts of cybernetics’ “second wave,” or “neocybernetics.” The study of autopoietic systems originated as a phenomenological supplement to evolutionary and molecular biology as a way to rediscover the *individual* organism—and “the autonomous nature of living unities”—amidst the swell of interest in and enthusiasm for those things “above” and “below” it (species and genes, respectively). Autopoiesis names the set of structural processes by which a given system reproduces its own means of organization—and, thus, itself—over and over again against the backdrop of a complex and uncontrollable environment. Maturana and Varela thereby offer a formal solution to the problem posed by Wiener as that of accounting for “pockets of negentropy in a sea of entropy.” The trick, as Maturana and Varela saw it, was to model a type of system that was not exclusively open or closed but both open and closed at once. The biologists took von Foerster’s thesis on self-reflexivity as a driving inspiration and, in turn, themselves provided the impetus for Niklas Luhmann’s theory of social systems. For each of them, the observed (and self-observing) autopoietic system was to be understood as materially and energetically open to its environment but *operationally* closed. In other words, while the organism exchanges a variety of physical elements with its environment on a constant basis, there is also a circuit of self-referentiality, by which a “living machine… continuously regenerate[s] and realize[s] the

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73 Maturana and Varela, *Autopoiesis and Cognition*, 75.
74 Wiener, *The Human Use of Human Beings*.
75 See, e.g., Varela, *Introduction to Observing Systems*; Luhmann, *Social Systems* (containing copious references to autopoiesis).
network of processes that... constitute[s] it,” which must remain forever constant.76

We thus see how the ideas generated by cybernetics play out in ways which the original “first-wave” of the movement could hardly contain. In Hayles’ estimation, “autopoiesis turns the cybernetic paradigm inside out.”77 To wit, for Maturana and Varela, “autopoietic machines... are purposeless systems.”78 The core activity of cybernetic science is itself transformed, following von Foerster and other important figures like Gregory Bateson, from the observation of systems to the systematization of the observer, developed through a precise demarcation of what inheres in an autopoietic system, on one hand, and what belongs to the realm of description and manipulation, on the other.79

We will return to Maturana and Varela’s work below, specifically with regard to its epistemological affinities with Hayek’s philosophy of science, but first it is necessary to fill out our preliminary sketch of posthumanism. Hayles’ narrative of this style of thought, as I suggested above, appears almost dialectical in the way that the tendencies towards abstraction and disembodiment, upon which cybernetics and information theory were founded, seem to become incrementally invalidated as new points of contention, overarching principles, and exemplary artifacts emerge. Among students of autopoiesis and cybernetics’ second wave, the primary debate has to do with the extent to which human societies can be understood as analogous to biological systems and, hence, observed as self-

76 Maturana and Varela, *Autopoiesis and Cognition*, 79.
77 Hayles, *How We Became Posthuman*, 140–149.
78 Maturana and Varela, *Autopoiesis and Cognition*, 86.
79 Maturana and Varela, *Autopoiesis and Cognition*, 81-82. See also Bateson, whose eclectic research and inventive ideas will sadly remain at the margins of my current project. We should note, if only in passing, his epistemological affinity with Hayek. In discussing the meaning of government and control in cybernetics, Bateson contends that “in no system which shows mental characteristics can any part have unilateral control over the whole... [T]he mental characteristics of the system are immanent, not in some part, but in the system as a whole” (Bateson, *Steps to an Ecology of Mind*, 316). It seems clear that, to Hayek, the market functions as such a “whole.”
contained, self-reproducing, self-organizing unities. Maturana and Varela themselves were split on this question, and so they set it aside in their many collaborative efforts.\textsuperscript{80} The social theorist Luhmann, to the discontent of Maturana and Varela alike, has powerfully affirmed resoundingly the autopoietic nature of social and cultural institutions.\textsuperscript{81} To the extent that American academics recognize his name, it is largely because his ambitious and comprehensive theory of autopoietic social systems has subsequently become an essential touchstone of the posthumanist, or “neocybernetic,” enterprise. In \textit{What is Posthumanism?}, Cary Wolfe likens Luhmann’s project to Derridean deconstruction. He neatly highlights how second-order systems theory, especially in its social application, has appeared on the American academic scene as a sort of “reconstruction of deconstruction,” decades after the supposed Death of Theory in the humanities.\textsuperscript{82} According to Wolfe, Derrida and Luhmann, each in his own way, mines “the formal dynamics of meaning that arise from the unavoidably paradoxical self-reference of any observation.”\textsuperscript{83} Whereas Derrida locates the associated “blind spots” in the history of Western thought and proves that thought to be ultimately untenable, Luhmann takes the paradox of autopoietic “openness from closure” as his starting point and subsequently exhibits the sorts of meaningful communications that can

\textsuperscript{80} Maturana and Varela, \textit{Autopoiesis and Cognition}, 118; see also Hayles, \textit{How We Became Posthuman}, 131–159, and Protevi, “Beyond Autopoiesis,” 94–112.

\textsuperscript{81} See, e.g., Luhmann, \textit{Social Systems}, 34–36; see also Moeller, \textit{Luhmann Explained}, 12–14. For social applications of autopoiesis beyond Luhmann’s important contributions, see, e.g., the essays collected in Geyer and van der Zouwen, \textit{Sociocybernetics: Complexity, Autopoiesis, and Observation of Social Systems}.

\textsuperscript{82} See Wolfe, \textit{What is Posthumanism?} 118–122. In introducing his project, Wolfe helpfully explains, “My sense of posthumanism is… analogous to Jean-François Lyotard’s paradoxical rendering of the postmodern: it comes both before and after humanism: before in the sense that it names the embodiment and embeddedness of the human being in not just its biological but also its technological world, the prosthetic coevolution of the human animal with the technicity of tools and external archival mechanisms… all of which comes before that historically specific thing called “the human” that Foucault’s archaeology excavates. But it comes after in the sense that posthumanism names a historical moment in which the decentering of the human by its imbrication in technical, medical, informatic, and economic networks is increasingly impossible to ignore…” (Ibid., xv–xvi).

\textsuperscript{83} Ibid., xx.
take place around or across this foundational blind spot. For Wolfe, the ethical ambit of such engagements with the complexities and conundrums of self-reference hinges on this important “principle of ‘openness from closure’”: “The very thing that separates us from the world connects us to the world, and self-referential, autopoietic closure, far from indicating a kind of solipsistic neo-Kantian idealism, actually is generative of openness to the environment.” Or, in Luhmann’s words, “The concept of a self-referentially closed system does not contradict the system’s openness to the environment. Instead, in the self-referential mode of operation, closure is a form of broadening possible environmental contacts.”

In their important anthology on neocybernetics, which highlights the innovations of von Foerster, Varela, Luhmann, and others, the cultural and media theorists Bruce Clarke and Mark Hansen describe this principle of “openness from closure” in terms of a “strong constructivism… [which] deals with the world by promoting a new level of attention to the media of its forms or, more concretely, to the environments and the embodiments of systems.” As Clarke explains, it is precisely this feature of second-order systems theory that transcends “the classical polarities… aligning humanism with openness and antihumanism with closure,” a polarity “over which thinkers as astute as Hayles continue… to stumble.”

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84 Wolfe learns from Derrida how “Enlightenment rationality is not, as it were, rational enough, because it stops short of applying its own protocols and commitments to itself.” Luhmann teaches, in turn, that this is a historical problem unique to modernity and the increasing “‘functional differentiation’ of social systems… Meaning now becomes a specifically modern form of self-referential recursivity that is used by both psychic systems (consciousness) and social systems (communication) to handle overwhelming environmental complexity” (Ibid., xx).
86 Luhmann, Social Systems, 37. Later in this same paragraph, Luhmann offers the remark, which underscores the resonance between his project and Derrida’s: “Meaning systems are completely closed to the extent that only meaning can refer to meaning and that only meaning can change meaning.”
87 Clarke and Hansen, “Neocybernetic Emergence,” 4–5. They offer this further elaboration, with Maturana and Varela, as well as Luhmann, clearly in mind: “[I]n order for a system to perpetuate itself, it must maintain its capacity to reduce environmental complexity, which is to say to process it not as direct input but as perturbation catalyzing (internal) structural change” (Ibid. 10).
88 Clarke, “Heinz von Foerster’s Demons,” 57.
conceptual framework of a paradoxical yet recursively operational open closure,” he holds, “is the crux of the radical neocybernetic reorientation of system thinking” and the singular catalyst for understanding “the complex posthumanism of neocybernetic thought.”89 My contention in the pages that follow is that neocybernetic constructivism, like the “reconstructive” work of autopoietic social systems theory, has been perfectly commensurate with the evolving power of financial capital and the social forms that have taken shape in the wake of a new market-oriented governmentality.90 Among the constitutive factors behind this contemporary constellation of knowledge and power is Hayek’s subjectivist epistemology, which in many ways anticipates later ideas in neocybernetics at the same time as it grounds the social theory and political philosophy that enabled the neoliberalization of national and global markets. The majority of commentators on posthumanism and neocybernetics appear unmindful of this essential historical connection. Clarke and Hansen, for example, laud the “growing body of scholarly work… [aimed at] rethinking the shape and evolution of the relations among science, technology, sociology, psychology, philosophy, history, literature, and the arts through neocybernetic terms.”91 Significantly, economics and politics have no place in their list, nor in their subsequent illuminations of neocybernetic theory’s interdisciplinary appeal.92

89 Ibid., 57.
90 I take up these themes of financialization and governmentality more specifically in the next two chapters.
91 Clarke and Hansen, “Neocybernetic Emergence,” 5.
92 Among the contributors to Clarke and Hansen’s anthology, John Protevi alone takes up the matter of politics head on, through an extended reading of Varela’s “rejecting the use of autopoiesis as a concept for thinking social systems.” (Protevi, “Beyond Autopoiesis,” 98). By placing autopoiesis in the context of the tumultuous Chilean political scene of the early 1970s, Protevi is able to pinpoint Varela’s fear with great precision. “The danger,” as Protevi understands it, “lies not in using autopoiesis as a means of understanding the social, but in using autopoiesis as a model in enacting a way of social being. An autopoietic social being is one focused on boundary maintenance, and this focus can create a fratricidal polarity” (Ibid., 102). Protevi’s work here is immensely helpful, but he does not extrapolate beyond the politics of the Chilean Civil War to more contemporary governmental applications of autopoietic theory. In short, I see a great deal of Hayek in Protevi’s reading of Varela, and this relationship, I believe, demands serious consideration. Compare, for example,
Relatedly, and more problematic still, is the fact that the governmental and
socioeconomic implications of this discourse have remained obscured by the enthusiastic
tone of many of its foremost, and even its most cautious, expositors. To Clarke and Hansen
and many of the admirable contributors to their anthology, the predominant threat on these
fronts appear to revolve around the sequential logic and programmed intellection of some
omniscient artificial brain dreamed up by a nefarious cabal of technocratic social engineers,
the forebears of a more hastily conceived post- or even trans-humanism. To the contrary, I
argue that to the extent that a threat to the cybernetic legacy continues, it has nothing to do
with a resurgent faith in centralized command-and-control architecture; rather, the thing
capable of undermining the merit of second-order systems theory is the fact that it has thus
far been entirely uncritical of contemporary power, even accommodating in many ways
capitalist societies recent financial, neoliberal turn. We will see this especially clearly in
Chapter Three, where I explicate the self-entrepreneurial subject of Human Capital Theory
as a model autopoietic machine, not a producer of profit like the old Economic Man (which
Maturana and Varela would characterize as allopoietic, producing something beyond or in
addition to oneself) but a producer of an idea of future satisfaction, an idea whose form and

Protevi’s sense of the key to overcoming closed systems’ tendencies toward “fratricidal polarity”—namely,
“establishing [an] ‘observer’ position that can use the notion of the interaction of organizationally closed
informational systems to appreciate this larger whole encompassing the autonomous and mutually blind
systems” (Ibid.)—with Hayek’s liberal solution to the threats of totalitarianism. “Varela finds this position in
Buddhist practice, with its necessity of stressing the ‘connection between the world view, political action and
personal transformation’” (Ibid.), Protevi recalls, but he may have found it equally evident in neoliberal social
theory.

93 Clarke and Hansen, for example, promise a “‘slowing down’ of technoscientific hybrids, of ecological
depredations, and of systems-theoretical theorizations… of everything that has recently come together under
the rubric of the ‘posthuman’” (Clarke and Hansen, “Neocybernetic Emergence,” 7). Rosi Braidotti, among the
most skeptical and careful of contemporary posthumanists, ultimately hails the “critical posthuman subject” as
“a relational subject constituted in and by multiplicity, that is to say a subject that works across differences and
is also internally differentiated,” promising “an enlarged sense of inter-connection between self and others” and
a “politics of location, or situated and accountable knowledge practices” (49–51). We will see below, in this
chapter and subsequent ones, how both the methodological “slowness” of Clarke and Hansen as well as the
ontological “radicalism” of Braidotti resound throughout Hayek’s writing.
operability remain constant no matter how much the meaning or object of satisfaction may change. Presently, we should see how posthumanist commentators suggest a straw man not unlike the one right-wing pundits and politicians have lately redeployed pegging centrist Democrats as socialist ideologues. What they have in common is an anachronous opponent, culled from less complicated times to distract—however unintentionally—from the new problematic of neoliberal marketology. So while contemporary expositors like Clarke and Hansen, following that “minority account” of cybernetics heralded by von Foerster’s “biological computing,” pit second-order thinking—its concepts, methods, and objects of study—in direct opposition to the technoscientific and computational cultures commonly associated with postwar cybernetics, I argue instead that we should recognize the technoscientific mediasphere—the various phenomena and practices unique to Web cultures, the smartphone, and so on—as the motor behind a recent explosion of environmental complexity, alongside which novel forms and systems incessantly emerge.

To be clear, I do not mean to deny the revolutionary nature of second-order systems theory as it emerged in the 1970s, only to warn against what seems to be a common mistake among scholars of posthumanism as they take up the neocybernetic cause—namely, that of conflating the distinction between revolutionary and normal science (in the Kuhnian sense of those terms) with the distinction between descriptive and normative theories of the world.  

94 For Kuhn, a revolution in science occurs when solutions to problems emerge which are not compatible with the extant paradigm, not unlike the “eventual rupture” in Alain Badiou’s set-theoretic political philosophy. See Kuhn, The Structure of Scientific Revolutions and Badiou, Being and Event. The following passage in Kuhn, describing traits common to scientific revolutions, bears some similarities to Foucault’s method of “problematization” in his “history of thought.” “Each of them [revolutions associated with the names Copernicus, Newton, Lavoisier, and Einstein] necessitated the community’s rejection of one time-honored scientific theory in favor of another incompatible with it. Each produced a consequent shift in the problems available for scientific scrutiny and in the standards by which the profession determined what should count as an admissible problem or as a legitimate problem-solution. And each transformed the scientific imagination in ways that we shall ultimately need to describe as a transformation of the world within which scientific work was done” (Kuhn, The Structure of Scientific Revolutions, 6).
Autopoiesis represents a radical innovation in how we think and speak about complex living systems, but this need not imply that these new ways of thinking and speaking are in any way better or worse than what came before. One task of critical thought should rather be to diagram the correlations between this novel epistemology and the unique types of social forms, governmental strategies, and sites of exploitation with which it has become implicated and inscribed.

IV. CULTURE AND CAPITAL: CONTEXTUALIZING CYBERNETICS’ SECOND WAVE

That capitalist ideology, the style and means of market-based governmentality, and the discipline of bourgeois economics have adapted to, and even helped to drive, the epistemological breakthroughs of second-order systems theory. Attention to the work and diffuse influence of neoliberal economic and social sciences demands a reconsideration of the political utility of neocybernetic ideals.

The financialization and neoliberalization of global markets (which I explicate below in terms of the capitalist system’s discovery of its own autopoietic structure, the secret for maintaining class composition against the grain of natural tendencies towards dissolution and decay) indicate the remarkable mutability and overall resilience of the capitalist system in the face of scientific, technological, and geopolitical upheaval. The sort of market mentalities prescribed by Chicago School standard-bearers like Hayek and Becker have colonized cyberspace and successfully domesticated the potent properties of knowledge and information (as discussed in the next chapter). Having taken little notice of the dominant economic and governmental discourse of our time, today’s theorists of the posthuman remain politically incapacitated, condemned to repeat the confrontations of an earlier era, confrontations with an enemy who for quite some time has, for all intents and purposes,

95 Another way of putting this is to say that the evolution of knowledge has no necessary corresponding ethical or political value; likewise, descriptions and illustrations of progress in the world of ideas, science, or technology should in no way be assumed to imply endorsement. I elaborate further on this confusion below.
ceased to exist.

The opening paragraphs of Clarke and Hansen’s introduction to *Emergence and Embodiment: New Essays on Second-Order Systems Theory* supply an ideal foil for my argument. The authors begin with a reference to a 1981 essay by the neurobiologist Varela, itself an introduction to a collection of von Foerster’s writings:

> What struck Varela in the early 1980s was the extent to which the force of von Foerster’s cognitive innovations [around issues of recursivity and observation] had not yet gained secure footholds in the mainstream academy, had ‘not permeated our intellectual preferences and current thinking.’ … Since Varela made this observation, there has certainly been some significant, if modest, penetration of these fundamental cognitive motifs into the ‘intellectual preferences’ of thinkers across the spectrum of natural, mathematical, and discursive disciplines. As we see it, however, *Varela’s words still ring true of our present time.*

Varela’s initial reflection seems well enough grounded, taking into account the corporatist and militaristic bent to Cold War-era technoscience and political culture, the principle venues for the actualization of cybernetic theory, especially in the United States. Three decades later, however, Clarke and Hansen’s reassertion appears somewhat dubious. Witness the widespread evidence counterposing their claim: the rise and increasingly pervasive influence of the neurosciences within psychology and psychiatry, but also within various subfields of economics, sociology, legal theory, political science, and biology as well; the critical rediscovery of a “softer” cybernetics to parry the hegemony of the international military-industrial complex; and the clamor, among digital enterprises, to develop maximally “granular” algorithms to delivery an evermore personalized virtual space of advertisements,

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97 C.f., e.g., Rose and Abi-Rached, *Neuro.*
98 C.f., e.g., Pickering, *The Cybernetic Brain*; and Hayles on the distinctions between the paradigms, objects, and methodologies of artificial intelligence research and artificial life research (Hayles, *How We Became Posthuman*, 222–246).
entertainments, search results, and product recommendation.\textsuperscript{99} Taken together, such trends in intellectual history and techniques of information servicing and provision would seem to suggest that the concepts and schemata at work in second-order cybernetics have not been ignored but rather applied and adapted in epoch-defining ways. That those applications and adaptations may seem less than obvious only further confirms the degree to which the underlying ideas have become entrenched.\textsuperscript{100}

Jean-Pierre Dupuy is among the philosophers and historians of cybernetics who have strongly emphasized certain of the movement’s less-than-obvious influences, which consequently appear that much more radical and far-reaching. For Dupuy, cybernetics provides an essential staging ground for the cognitive sciences, which seek to complete its project of “the mechanization of the human.”\textsuperscript{101} Equally important, from a culturalist perspective, is the mark that cybernetics left on the human sciences, especially in France. The luminaries of structuralist research, according to Dupuy, discovered in cybernetics “a radicalization of the critique of metaphysical humanism.” “The psychoanalyst Jacque Lacan, along with the anthropologist Claude Lévi-Strauss and the Marxist philosopher Louis Althusser… adopted the same critical attitude toward Freud as cybernetics.”\textsuperscript{102} Looking back on those developments, Dupuy proposes we grasp the merger of cybernetics with structuralist and then poststructuralist French theory—all rallying around a certain

\textsuperscript{99} See Chapter Three of this dissertation.

\textsuperscript{100} Here of course I defer to Foucault, who describes his “archaeological” project in \textit{The Order of Things} as an attempt “to reveal a \textit{positive unconscious} of knowledge: a level that eludes the consciousness of the scientist and yet is part of scientific discourse” (Foucault, \textit{The Order of Things}, xi).

\textsuperscript{101} Dupuy, \textit{The Mechanization of the Mind}, 5.

\textsuperscript{102} Ibid., 19. The cyberneticians most relevant to this discussion is the psychoanalyst Lawrence Kubie, who, as both Dupuy and Hayles point out, was somewhat disregarded by his Macy Conference colleagues, though his insistence on the continued importance of \textit{meaning} would have a significant impact on cybernetics’ second-wave. For Dupuy, Kubie’s seminal contribution, that which resonated most with Lacan and the other structuralist pioneers, was “the postulation of a hidden entity, located in the substructure of a purportedly conscious subject, manifesting itself only through symptoms while yet being endowed with the essential attributes of the subject” (Ibid., 19).
“championing [of] the inhuman”—as a veritable “turning point in the history of human conceptions of humanity.” In other words, we have taken leave of the human sciences proper to pursue new problems of “subjectless cognition… cognition without mental content.”

Like Dupuy, Pickering brings to the fore a certain resonance between cybernetics—as “ontological theater”—and various aspects of poststructuralist philosophy and social theory. Particularly intriguing is his narrative of the “institutional marginality” and “profound amateurism” of the psychiatrically and neurologically inclined cybernetic practices in England between the end of World War II and the mid-1960s, which he depicts as an exemplary case of what Gilles Deleuze and Félix Guattari call “nomad science.” In contrast to the “royal sciences… the modern sciences, which function as part of a stable social and political order… [and] which prop up the state,” nomad sciences like cybernetics “wander in from the steppes to undermine stability… [and] threaten the established order.” (The radicalism of neoliberal governmentality, what Foucault calls its “state-phobia,” formed at the margins of the economic establishment, can be cast in similarly “nomadic” terms.) For Pickering, the affinity between cybernetics and Deleuze and Guattari’s “nomadism” is but one reference point for a vast “cultural assemblage” that

103 Ibid., 18, 21.
104 Ibid., 19. Dupuy rounds off his discussion of cybernetics and French theory, really a response to Heidegger’s critique of cybernetics as “the height of metaphysical humanism,” by suggesting that “the system of ideas and values embodied by cybernetics can be understood only if one recognizes its purpose as having been fully ‘antihumanist’ in the sense of the preceding discussion” (Ibid., 23). C.f. Heidegger, “Only a God Can Save Us,” 267–284.
105 Pickering, The Cybernetic Brain, 11; see also Ibid. 396–99.
106 Ibid., 11, 71; Pickering’s detailed excavation of the research and writing of Gray Walter, Gregory Bateson, R.D. Laing, Stafford Beer and others puts us “in the presence of… lives lived at odds with and transversely to the usual institutional career paths… critical of the fields whose terrain [they] crossed…[but] always searching for like-minded people to interact with” (Ibid. 181). Pickering does not treat Deleuze and Guattari’s work very extensively, but we should note that Guattari was deeply invested in problems related to cybernetics for much of his career. See, for example,
includes a range of political projects, social practices, and aesthetic phenomena. Antipsychiatry, altered states research, the psychedelic drug scene, rising interest in non-Western spiritual practices like yoga and Buddhist meditation, experimentation with novel identity and community forms, action painting, flicker films, and ambient electronic music—each in one way or another crosses paths with Pickering’s alternative history of cybernetics.  

There are two important ways in which the work of Dupuy and Pickering can be seen to supplement or even contravene what we have said thus far regarding the development of cybernetics, the innovations of second-order systems theory, and the crystallization of a posthumanist field of knowledge. First, they both portray an expansive and diffuse legacy of cybernetics that moves well beyond the customary glosses on the subject (i.e. those following Haraway and Galison) to affirm the field’s inherent culturalist, antihumanist, and non-modern connotations. Second, in emphasizing the cognitivist and psycho-analytical tropes of early cybernetics, Dupuy and Pickering each finds reason to rebuff those historical narratives (such as the ones advanced by Hayles and Clarke and Hansen) that seek to inscribe a definitive break between the first and second waves of cybernetic research. For Dupuy, this is a matter of understanding that, from the very start, cybernetics was less invested in rendering “machines in anthropomorphic terms” than it was in rigorously articulating a theory of “the mechanization of the human, as the unveiling of what is not human in man.” For Pickering, it means “a redirection of cybernetics” away

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108 Dupuy, *The Mechanization of the Mind*, 110. The passage continues by quoting a remark Lacan made to his students during his seminar of 1954–1955: “The question of knowing whether [the machine] is human or not is obviously completely settled—it is not. But there is the question too of knowing whether the human, in the
from exclusively epistemological problems—namely, that of “the observer’s personal responsibility for his or her knowledge claims”—and towards more rousing ontological ones. The epistemological emphasis of the second wave, Pickering argues, is but “a symptom of the dominance of specifically epistemological inquiry in philosophy of science in the second half of the twentieth century.”

Fully entrenched in this milieu, “second-order cybernetics has talked itself into a corner” and, as a result, has facilitated “the disappearance of the performative materiality of the field,” which Pickering brilliantly recovers by resurrecting the artifacts and automata popular with first-generation cyberneticians like Ross Ashby and Gray Walter.

So rather than perceiving second-order systems theory as a rupture with what had come before it, I take to heart Pickering and Dupuy’s suggestions that we try to grasp the myriad ways that its concepts and techniques emerged out of a cultural and intellectual milieu that spanned several decades and many disciplinary fields. Alternately, we can use the work of Pickering, Dupuy, and others to point out how the celebrated themes of neocybernetics have in fact achieved far more than a “modest penetration,” as Clarke and Hansen put it, of everyday life and thought. By bringing Hayek into the fold, I want to do something a little different, though in many respects complimentary to what I have drawn from Pickering and Dupuy. Hayek represents a flourishing discourse in social, economic, and political philosophy, parallel to that of cybernetics and neocybernetics, emphasizing problems of recursivity, subjectivism, and the auto-tele production of organic, synthetic, and sense in which you understand it, is as human as [you suppose]” (see, The Ego in Freud’s Theory and in the Technique of Psychoanalysis, 1954–1955, 367).


Ibid., 26. To Pickering, such artifacts came to be viewed by the second-wave cyberneticians as so many impulsive creations of an immature science. “We used to do things like that in our youth,” Pickering hears them saying—“now we do serious epistemology” (Ibid., 26).

Once again, this is something that I explore in greater detail in subsequent chapters.
hybrid systems. And the fusions and confusions of nature and culture, biology and technology, actor and network, system and environment—all hallmarks of posthumanist thought—reveal themselves early and often in Hayek’s writing, which, with scant exception, has been hitherto neglected by the genealogists of posthumanity.\textsuperscript{112} So instead of turning to the cognitive paradigm (à la Dupuy) or to cybernetics’ “ontological theater” (à la Pickering), we will for now stay within the scope of epistemological inquiry circumscribed by the advocates of neocybernetics, only we will focus on its complicated correlation with neoliberal thought. For our purposes—which include trying to think simultaneously culture and capital, the posthuman and the neoliberal—the beleaguered version of second-order systems theory put forward by such figures as Clarke and Hansen presents a significant stumbling block, as it neglects analogous epistemological developments whose impact on late capitalist art, science, and culture has been, if nothing else, entirely and indisputably \textit{im}modest.

V. THE SPECIFICITY OF SOCIAL SCIENCE: EPISTEMOLOGY AND METHOD

\textsuperscript{112} One important exception is the philosopher Dupuy. Although he does not explicitly take up the terms of posthumanism, his contextualization of Hayek’s social theory within the problem field of cybernetics and general systems theory has been enormously helpful to my research. See especially Dupuy, “The Autonomy of Social Reality,” 153–175 and Dupuy, “Intersubjectivity and Embodiment,” 275–294. In the earlier article, Dupuy makes plain the necessity of his encounter with Hayek. Hayek, he affirms, “understands society as a system that is organizationally closed in the sense given to this notion by systems theory. This is no accident given that Hayek has long been acquainted with cybernetics and with the theory of autonomous system” (Dupuy, “The Autonomy of Social Reality,” 165–66). After putting Hayek’s “spontaneous social orders” in touch with Maturana and Varela’s autopoietic systems as well as Prigogine’s dissipative structures, Dupuy scolds his fellow late-twentieth-century humanists for shying away from Hayek’s social thought, reminding us that “the fact that [Hayek] arrives at conclusions that offend the well-anchored certainties of progressive thinking should not be allowed to obscure the philosophical importance of [his] work” (Ibid. 166). My own hope is to go one step further in demonstrating, over the course of this dissertation, some of the ways in which neoliberal governmentality, in part thanks to Hayek’s keen attention to systems theory and cybernetics, has become masked by and/or confused for much of what today passes for “progressive thinking.” Besides Dupuy, the management theory journal \textit{Emergence: Complexity and Organization} reprinted two of Hayek’s most important later essays—“The Pretense of Knowledge” and “The Theory of Complex Phenomena,” both of which we will have occasion to return to below—in its 2007 double issue on “complexity thinking and systems theory.”
That Hayek’s social-theoretic and market-based approach to automatic, informational, and communications systems anticipates neocybernetics’ problematization of the observer as well as the basic premise of autopoiesis concerning systems that are at once open and closed. The neoliberal price system comes to constitute not an economy but an environment, as the Hayekian science of catallactics appears and operates analogously to the emergent discipline of media ecology, constructing the socius as an enduringly incomplete and ever-changing means without end.

Hayek’s transition, between the two World Wars, from concrete economic problems to problems in the philosophy of science seemed natural enough. As he began to take on these latter problems in the early 1940s, his preliminary objective was to repudiate the hard rationalism of “social physicists” like Bernal and Haldane, whose methodological conflation of two qualitatively distinct and incommensurate phenomena had, according to Hayek, been directly responsible for policy-makers’ naïve and hazardous beliefs in the virtue and efficacy of centralized planning, command, and control. In a series of essays from the early 1940s, collected in 1955 as The Counter-revolution of Science, Hayek sets his sights on the “scientistic” traditions of Saint-Simon, Comte, Hegel, and others who saw societies and civilizations in totalizing, bluntly mechanistic terms. As Hayek rightly observes, their physicalist gloss on

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113 In print, Hayek almost never mentions his contemporary adversaries by name, preferring instead to work through criticisms of their historical antecedents. Mirowski provides important context for this aspect of Hayek’s work and a useful summary of midcentury debates over the viability of social physics and Bernal’s “science-planning” movement (see Mirowski, The Effortless Economy of Science). As I argue later, the hypothesis of a “physical basis of life,” an important precedent for cybernetics, will ironically turn out to be commensurate with Hayek’s philosophy of social science and its subjectivist methodology. Once physicists came to understand that self-organization could emerge within unstable, far-from-equilibrium systems (as with Prigogine’s work on “dissipative structures”), the physical and the biological (and for that matter the social too) became more or less homologous from a systems perspective.

114 At the root of Hayek’s antagonism is a deep-seated detestation for Descartes, who, Hayek holds, had “sown the seeds… [of] this intellectual hubris… common… [to] Hegel and Comte” and who was responsible for their dead-end pursuits of “Human Reason, with a capital R” and the “mysterious teleological force” behind social evolution, not to mention the unwavering faith in a “collectivism which aims at ‘conscious direction’ of all forces of society” (Hayek, The Counter-Revolution of Science, 203–204). From the seventeenth century forward, according to Hayek, Western thought became decidedly overwhelmed by the “naïve” and retrograde perspective promulgated by the Cartesian esprit géométrique. Hayek charges that “the ascendancy of this view… implied in fact a relapse into an earlier naïve way of thinking, into a view which habitually assumed a personal inventor for all human institutions, be it language or writing, laws or morals. It is no accident that Cartesian rationalism was completely blind to the forces of historical evolution. And what it applied to the past it proclaimed as program for the future: that man in the full knowledge of what he was doing should deliberately create such a civilization and social order as the process of his reason enabled him to design.” The result,
biological and social forms played a prominent role in shaping industrialization in Europe and the United States; railways, central banks, and electrical grids all owe something to the general presumption of human mastery and intellectual potential most propitiously on display by the cocksure planners and engineers who appear so often in Hayek’s work.\textsuperscript{115} Where we might expect the arch-philosopher of capitalism to see inspiring examples of modernization, Hayek instead sees the rise of an elite set of technocrats, politicians, and business magnates all colluding to dictate the social distribution of resources, bodies, and information according to their latest predictive techniques. For Hayek, nineteenth-century industrialization thus ranks among the signal failures of modern governmentality, for it mistook the market to be an inevitable outcome of human ingenuity rather than, as Hayek himself came to see it, as a propitious accident of evolution. In an 1964 lecture entitled “Kinds of Rationalism,” Hayek presents his interpretation of history in terms that would have perhaps struck a chord with the Foucault of \textit{The Order of Things}. Here, Hayek very clearly announces himself as critic of modernity writ large.

Our issue may now be pointed by asking whether, as Cartesian rationalism and all its descendants assume, human civilization is the product of human reason, or whether it is not the other way round and we should regard human reason as the product of a civilization which was not deliberately made by man but which had rather grown by a process of evolution… [N]obody will deny that the two phenomena constantly interact. But the typical view of Cartesian rationalism is to insist throughout on the first interpretation, on a pre-existing human reason designing institutions. From the “social contract” to the view that law is the creation of the State, and that because we have made our institutions we can also change them at will, the whole thinking of our modern age is permeated by the offsprings of this tradition.\textsuperscript{116}

Most intriguingly, Hayek continues with a sketch of the disciplines that, by the mid-Sixties,

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\textsuperscript{115} See, e.g., Hayek, \textit{The Counter-Revolution of Science}, 156–167. \\
\textsuperscript{116} Hayek, \textit{Studies in Philosophy, Politics, and Economics}, 86.
\end{flushright}
had successfully mounted challenges to this modern mindset, coming to the aid of social theory by bringing to light “phenomenon of implicit learning… one of the most important parts of cultural transmission, but one which we as yet only imperfectly understand.”

These would be his contemporary allies in evolutionary biology, generative linguistics, and “the new science of social anthropology.”

As Louis Hunt reminds us, Hayek’s positions with respect to social physics, scientism, and the Cartesian legacy have their roots in the longstanding “Socialist Calculation debate.” In its 1930s incarnation, the debate featured Hayek and his early mentor, the Austrian liberal Ludwig von Mises, arguing against the market socialists’ position, elaborated by Oskar Lange and others, that “a central planning board could coordinate supply and demand as (or even more) effectively than the unfettered market.” Not only is such planning technically unattainable, in Hayek’s view, but it rests on two fundamentally mistaken assumptions of neoclassical economics: first, that social knowledge is evenly distributed and perfectly available to all, and second, that markets exist in a state of static equilibrium. If we grant these assumptions, overcoming the practical impediments to successful socialist calculation would be merely a matter of developing the necessary technologies; Hayek, of course, does not grant them. To the contrary, he insists on (1) “the importance [for knowledge production] of the particular circumstances of time and place”

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117 Ibid., 87.
118 Ibid., 87. I discuss Hayek’s regard for evolutionary biology and social anthropology elsewhere. Not having occasion to return to Hayek’s particular sense of kinship with certain postwar movements in linguistic science, I should point out that he favorably cites the early work of Noam Chomsky in two of his most important later essays, “The Theory of Complex Phenomena” and “The Primacy of the Abstract.”
121
and (2) the obligation, on the part of economic theory, to account for “change as such.”

Thus, without a dual exposition of *situatedness* and *dynamism*, both Marxist and neoclassically minded economists fail even to scratch the surface of “the main problem.” They “[do] not deal with the social process at all,” Hayek contends; rather, they preoccupy themselves with the technical details of models that remain at once overly sophisticated and speciously simplistic.

The problem Hayek saw plaguing market socialism in the first half of the twentieth century is analogous to the problem that cognitive theorists and students of autopoiesis saw plaguing their predecessors and interlocutors in psychology and biology. Successful as all those “scientistic” thinkers may have been in their various designs, their respective outlooks, observed in the wake of the midcentury communications revolution, appear wholly ignorant of the inestimable functions of uncertainty, noise, and chance operation in the workings of such exceedingly complex systems as societies, organisms, and minds.

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122 Ibid., 81–2
123 Ibid., 91.
124 Cognitivist philosopher Barry Smith, for example, in an article that bears the alternative title “Artificial Intelligence and the Free Market Order,” likens Hayek’s philosophy of mind and interest in gestalt psychology to the “more modern…more challenging” of two distinct paradigms of artificial intelligence research. “[T]he older and more orthodox ‘symbolic’ or ‘symbol-processing’ paradigm… sees intelligence as a matter of the sequential manipulation of meaningful units of roughly the sort with which we are familiar in reasoned introspection… [The] ‘connectionist’ or ‘sub-symbolic’ paradigm [by contrast]… sees intelligence as a matter of the processing of units much more finely grained in character than those with which we normally suppose ourselves to be familiar in conscious experience. Such processing is to be conceived by analogy not with processes of reasoning as commonly understood, but with the massively parallel processing of electrical impulses by the billions of nerves distributed through the human brain… Connectionists… are interested neither in the rule-bound, deliberative efforts of the novice, nor in the sort of static knowledge that comes packaged in the form of scientific theories. Rather they are interested in the *spontaneous, intuitive, tacit, dynamic, practical knowledge* of the expert, and they would insist thereby that there are some spheres in which we might all claim to possess huge amounts of knowledge of this sort” (Smith, “The Connectionist Mind: A Study of Hayekian Psychology,” 9–10). Elsewhere, Maturana and Varella position their autopoietic research agenda as a phenomenological response to the Darwinian paradigm, claiming that “evolutionary thought through its emphasis on diversity, reproduction and the species in order to explain the dynamics of change has obscured the necessity of looking at the autonomous nature of living unities for the understanding of… the living system as a whole” (Ibid. 74–75).
125 See, for example, Hayek, “Theory of Complex Phenomena,” wherein Hayek makes frequent comparisons of catallactics to other fields, esp. linguistics, biology, and even artificial intelligence.
Hayek’s perennial doubts as to the feasibility of market planning ultimately reveal an even deeper skepticism towards the whole of the bourgeois economic establishment.\(^{126}\) His discernment of the spontaneous, ad hoc evolution of social institutions (arrived at by way of Smith and Darwin) and the finite, situated nature of human knowledge (arrived at by way of Socrates, Kant, and Hume) lead Hayek to question the methodological foundations of his discipline and, subsequently, those of the social sciences more generally. Markets, he holds, emerge in response to an epistemological shortcoming (which I will return to shortly) and, to the extent that they do in fact exemplify spontaneous social organization as Hayek claims,\(^ {127}\) provide a firm foundation for a comprehensive reformulation of scientific method. In other words, Hayek treats the characteristic “misunderstanding” of neoclassical economists—namely, their failure to grasp “the fundamental problem to which markets are the solution”\(^ {128}\)—as indicative of a more deeply entrenched problem. The shortsightedness of economic calculation, which has long been seen as the non plus ultra of Hayek’s critique, is in fact but a symptom of a more general inadequacy in the theories and procedures supporting modern practices of social observation.

As a preliminary step to reversing the effects of centuries of ill-conceived “scientistic” planning, Hayek initially saw a need to enumerate certain qualitative distinctions between the physical and social sciences. Recounting these distinctions will help us recognize aspects of his thinking in more recent philosophical and scientific tropes of multiplicity, complexity,

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\(^{126}\) C.f., Hunt, “The Origin and Scope of Hayek’s Idea of Spontaneous Order,” 50–1. For Mirowski, this is the point at which Hayek diverges from the “cyborgization” of economic thought (Mirowski, Machine Dreams); I hope to show, to the contrary, that things are more complicated, that Human Capital Theory, as presented by Schultz and Becker, articulates a notion of the economic agent as a subset of potential technological investments (see Chapter Three).

\(^{127}\) This view has been roundly criticized, by thinkers ranging from economist Frank Knight in the 1940s to philosopher John Gray, more recently. See, e.g., Gray, False Dawn.

social networks, and spontaneous creativity. In the 1930s and 1940s, Hayek argued that the physical sciences deal with properties of objects, while the social sciences deal with “abstract” categories and “patterns of relationships.”\textsuperscript{129} The physical, or “natural,” sciences, he claims, “begin with the complex phenomena of nature and work backwards to infer the elements from which they are composed,” while the social sciences proceed in essentially the opposite direction, seeking to “discover… principles of structural coherence of the complex phenomena which had not (and perhaps could not) be established by direct observation.”\textsuperscript{130} “Building up” from the “directly known” attitudes and actions of the individual elements, yet leaving the specific motives and meanings behind those attitudes and actions relatively undetermined, the methods of the social sciences are both “individualistic” and “subjectivist,” as opposed to the “collectivist” and “objective” operations of natural science.\textsuperscript{131} Hayek places special emphasis on the ways in which the facts that the social sciences generate, and the sort of knowledge that they produce, are different in kind from the facts and knowledge revealed by the physical sciences. The former are mediated by \textit{meaning} and the web of articulations linking the scientists to each other and to those whom they study; the latter are mediated by \textit{instruments} and the whole series of visibilities opened up to repeatable observations.\textsuperscript{132}

\textsuperscript{129}Hayek, \textit{Individualism and Economic Order}, 59.
\textsuperscript{130}Hayek, \textit{The Counter-Revolution of Science}, 38 (emphasis in original). As we will see below, Hayek later revises his thought about the “complexity” of phenomena studied by physical sciences.
\textsuperscript{131}Ibid., 38.
\textsuperscript{132}Hayek distinguishes his brand of social science from the “natural sciences of society,” which include population statistics, demographics, and epidemiology, for example (and which I take up further in my discussion of biopolitics in Chapter Four). Unlike in the physical sciences, the “true” social sciences deal with concepts that “refer not to some objective properties possessed by the things, or which the observer can find out about them, but to views which some other person holds about the things.” This is to suggest that, in the social sciences, the observer is immanent to the phenomenon observed. Her “objects cannot even be defined in physical terms, because there is no single physical property which any one member of a class must possess. These concepts [among which Hayek includes tools, weapons, words, sentences, communications, acts of production] … can be defined only by indicating relations between three terms: a purpose, somebody who
While Hayek sees nothing inherently alarming about the natural sciences’ approach to the world, it is noteworthy that he clearly recognizes the contingency of its historical triumph, pointing up the many difficulties that physicists since Galileo and Newton have encountered in making their specific methods and modes of fact-production culturally acceptable. Problems only arise when the “facts” of social science are assumed to be of the same sort as those produced by these sciences of nature.

Hayek describes how modern science offers “a completely new and different way [of order[ing] or classify[ing] the events of the external world,” one in which the “facts” of our “ultimate reality” register as being different, and sometimes radically so, from “appearances.” Modern science, it would seem, establishes itself upon a fault line, as it bifurcates the field of visibility into that which remains directly perceptible—that which has rooted thousands (if not millions) of years of habits, traditions, and institutions—and those micro and macro phenomena undetectable without the aid of optical technologies.

Immediate “sense perceptions,” on Hayek’s count, no longer register as “acceptable data” for “hard” science once the ideas and methods of Descartes and Newton have entered the fray. That immediately accessible sensory data, which human brains have evolved to collect and to which human bodies have been trained to respond, cannot be trusted to form stable building blocks for modern social institutions and fields of knowledge. Along with “given concepts,” “subjective qualities,” or “the relation[s] of man to things,” such immediately holds that purpose, and an object which that person thinks to be a suitable means for that purpose… [W]e could say that all these objects are defined not in terms of their ‘real’ properties but in terms of opinions people hold about them. In short, in the social sciences the things are what people think they are. Money is money, a word is a word, a cosmetic is a cosmetic, if and because somebody thinks they are. That this is not more obvious is due to the historical accident that in the world in which we live the knowledge of most people is approximately similar to our own” (Hayek, Individualism and Economic Order, 59–60).

133 Hayek, The Counter-revolution of Science, 17.
134 Ibid., 18–19.
accessible sensory data depreciates steadily as the modern epistemological paradigm takes hold.\textsuperscript{135}

Monumentally important to the historical and cultural development of human civilizations, yet incompatible with the system of universal truth that emerged in the seventeenth century, the perceptions, concepts, qualities, and relations that fabricate everyday experience should have fallen within the purview of the social sciences from the very start. Instead, those sciences fashioned themselves in the image of hard science. Under the influence of thinkers like Comte, Hegel, and others, the nascent sciences of sociology, economics, and psychology sought to construct a knowledge of society, market, and mind that would be the same \textit{type} of knowledge as that which the physical sciences produce through their hyper-empirical methods. Hayek sets himself the task of rectifying this mistaken trajectory. For the social sciences, the perceptions, concepts, qualities, and relations that constitute each individual’s lifeworld are precisely what matters most. Compared to the physical sciences, the social sciences, Hayek says, see and study “another world” entirely.\textsuperscript{136}

Especially in his early work, Hayek articulates this “other world” of social thought, the world which he must set free from the false methodologists who have come before him, as a world of meaning, a world in which “what men think about the world and how they consequently behave” precedes any concern for “what they ought to think.”\textsuperscript{137} Where the

\textsuperscript{135} Ibid., 22–23. This is not to say, however, that there do not exist valid and useful techniques for observing society from a more “naturalist” or “physicalist” perspective. Hayek points to epidemiology, genetics, nutrition, and demography—in short, those fields that Foucault, in the mid- to late-1970s, most closely associated with the rise of “biopolitical” knowledge/power—as important and necessary “natural sciences of man,” they are not, alas, properly “social” sciences, though, as their statistical practices, while fine for identifying frequencies and regularities, remain “far from dealing with structures of relationships” or with societies “as wholes.” More important still, the statisticians’ method of “random sampling” fails to \textit{affect} the constitution of the whole, something truly “social” scientists, in the Hayekian mold, must perennially do.

\textsuperscript{136} Ibid., 24.

\textsuperscript{137} Ibid., 22.
physical sciences advance *normative* claims that often contradict direct perception (often because they deal with micro and macro phenomena undetectable by the naked eye), propositions in the social sciences operate more *hermeneutically* and are inherently more *reflexive*, in Hayek’s view.\(^{138}\) Granting the historical contingency of scientific objectivity and the finitude of individual human knowledge, we can begin to grasp the logic of Hayek’s contentions that it is not the physical but the social sciences that first attempt to describe *what is*, insofar as *what is* remains inextricable from *what is thought about* what is. Only after the reflexive, second-order cybernetic turn, and the formal systematization of scientific knowledge itself, would the problem fields and methodologies of the natural, physical sciences achieve parity with those of social or human science.

From his targeted critique of socialist and neoclassical economics, then, Hayek begins laying the groundwork for a “truly” scientific understanding of the complex dynamics of social action and evolution. He cautions that “unless we can understand what the acting people *mean* by their actions, any attempt to explain them, i.e., to *subsume them under rules which connect similar situations with similar actions*, are bound to fail.”\(^{139}\) The task of social science, as Hayek sees it, is to postulate and appraise the evolving “rules” of networked interactivity. “What the acting people *mean*” must be allowed to override in all cases what they actually do, since the “type” of situation and “class” of action are far more valuable to the construction

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\(^{138}\) According to Caldwell, Hayek’s enthusiastic encounter with Weaver and the emergent field of complexity theory suggests a definitive departure from his critique of “scientism.” Hayek’s embrace of general systems theory, evolutionary biology, automaton theory, and artificial intelligence research appears, in Caldwell’s words, “heartbreaking to the hermeneuticians” (Caldwell, *Hayek’s Challenge*, 301). I, however, believe the hermeneutic insistence in Hayek’s philosophy of social scientific method can be reconciled with his “transformative” turn towards models of complexity in the natural sciences. The support for this claim will require a leap beyond cybernetics’ first wave, which is as far as Caldwell gets, into the cognitivist terrain of second-order systems thinking. I take this up in more detail below.

\(^{139}\) Hayek, *The Counter-Revolution of Science*, 31 (emphasis added).
of facts and theories than the concrete particulars of each observation.\textsuperscript{140}

That neoliberalism has become such a dominant force in today’s telematic media milieu is hardly coincidental. What follows here is an attempt to tell the story of the powerful convergence of market-oriented political philosophy and the posthumanist and systems-theoretical outlook that has propelled information-processing tools and network architectures into nearly every domain of daily life. Hayekian social thought and cybernetic systems theory developed along similar historical trajectories, each responding in its own way to the bellicose threats of midcentury totalitarianisms, each posing analogous methodological problems and staking out likeminded positions on epistemological and ontological concerns. Hayek himself frequently engaged with and utilized a great deal of contemporaneous research in communication theory, information science, biological and ecological systems, and artificial intelligence.\textsuperscript{141} As a result, as early as the 1940s, his thinking on science and society bears many hallmarks of posthumanist thought: the prioritization of problems of emergence and complexity; the investigation of spontaneous order in dynamic organic processes; the meta-production of more relevant and precise modes of communication in search of postnationalist solutions to geopolitical discord; and, finally, deliberate subversion of boundaries between nature and artifice, human and animal, the living and the machine.

Beyond Hayek’s direct rapport with a mélange of first-wave cybernetics researchers,

\textsuperscript{140} Ibid., 24.

\textsuperscript{141} In addition to Hayek’s comments on Weaver’s “Science and Complexity” paper, see, e.g., his favorable references to Wiener’s cybernetics, von Neumann’s theory of automata, Neumann and Morgenstern’s theory of games, and the various proponents of general systems theory (Hayek, \textit{Studies in Philosophy, Politics, Economics}, 14, 25; Hayek, \textit{New Studies in Philosophy, Politics, Economics, and the History of Ideas}, 26; Hayek, \textit{Law, Legislation and Liberty, Volume 3}, 159). C.f., Mirowski, \textit{Machine Dreams}, 235–41. Mirowski elaborates how Hayek, seen by some as “the premier political philosopher of the Information Age… filtered various cyborg themes into economics at second- and third-hand, motivated to search them out by his prior commitment to the metaphor of the market as a powerful information processor” (Ibid. 238).
I hope to draw out of his work indication of a more general paradigm shift in the conceptualization of self and society, and in the comprehension of the rapidly multiplying sites for the technical interpolation of each into the other. As I suggested in the Introduction, the “neo” of neoliberalism designates not a revival of earlier philosophical and political liberalism—with its laissez-faire attitude and anthropocentric, individualist ethos—but a radical refashioning of that movement’s core features. Hayek’s fervid belief in the inevitability of human advancement provides the moral prop for his political and economic philosophies and, consequently, for the neoliberal project as a whole. Corollary to this belief is an evolutionary epistemology that understands the socius as an increasingly complexifying system of differences.142 From this perspective, as populations and cultural institutions exponentially expand, and as technical knowledge becomes evermore specialized, it falls on governments, in their mandate to invest in the public interest, to establish and maintain an increasingly robust connective tissue among these disparate and distributed elements.143

Nowhere is Hayek’s methodological craft more deftly on display than in his move to define this chief problem of society as, at heart, an economic one. In his seminal 1945 essay “The Use of Knowledge in Society,” he describes how the “economic problem of society,” which had traditionally been restricted to the question of “how to allocate ‘given’ resources,” thereby becomes “a problem of the utilization of knowledge which is not given to anyone in

142 In developing his sense of evolutionary epistemology, Hayek draws heavily on the philosophy of his friend and fellow Austrian expatriate Karl Popper’s elaboration of the topic (see Popper, *Objective Knowledge*). Hayek, *Studies in Philosophy, Politics, and Economics* is dedicated to Popper and discusses his philosophy of knowledge at length in Chapters Two through Six. John Gray offers an excellent commentary on the intellectual affinities between Hayek and Popper (Gray, *Hayek on Liberty*, 10–12, 110–15).

143 Note the echoes here to Luhmann’s claim that “only communication can communicate”; Geyer and van der Zouwen gloss Luhmann’s “novel thesis” as follows: “While social systems are self-organizing and self-reproducing systems, they do not consist of individuals… but exclusively of communications” (Geyer and Van Der Zouwen, *Sociocybernetics*, 7).
its totality.” By “knowledge” Hayek does not mean anything like an unchanging fact or universal truth but what he, following Gilbert Ryle’s philosophy of mind, calls “knowledge-how,” which “consists in the capacity to act according to rules which we may be able to discover but which we need not be able to state in order to obey them.” Because this practical knowledge is site and situation specific, and because different individuals inevitably interpret and make use of the same pieces of information in different and unpredictable ways, Hayek treats any attempt to consciously coordinate the distributed sum of social knowledge as dangerously misguided. The “supra-conscious mechanism” of the market allows society to optimally “utilize” this knowledge precisely to the extent that its institutions abstain from pursuing the collective good. While we are all-too-familiar with the political outcomes of neoliberalism, a closer look at its underlying social epistemology will reveal its ideals and strategies to be far more pervasive and resilient than we would likely expect. The first thing to note is that, by formulating the problem in this way, Hayek announces a fundamental reorientation of economic thought around inherently complex objects and subjectivist methods. At the same time, he puts the economist’s niche skillset in especially high demand, as uniquely poised to tackle society’s “economic problem.”

The novelty of neoliberalism thus derives, at least in part, from its ability to tap the trends of midcentury technoscience and convincingly identify correlative social needs—namely, those that involve bringing together increasingly diverse and demassified fragments to form evermore complex wholes—needs that only its own intellectual exponents could assuage. In Hayek’s illustrative early work, markets become “communication systems,” which are not primarily sites of open competition and commercial exchange but “networks”

144 Hayek, Individualism and Economic Order, 78.
145 Hayek, Studies in Philosophy, Politics, and Economics, 44.
charged with the “instantaneous” coordination and, in biological terms, phylogenetic transmission of culture and knowledge. In turn, *prices* become synecdochic expressions of scattered information.\(^{146}\) Finally, in the eyes of the scientific observer, *individuals*, those who “interpret” prices and relay those interpretations through statements and performances within the ever-expanding space-time of the market, become “organisms,” autopoietic systems, or epistemological analogues of information-processing machines.\(^{147}\) In sum, Hayek’s work, as it unfolds alongside cybernetics and subsequent articulations of biological systems theory, describes a unique constellation of technology (markets), semiology (the price system), and methodology (subjectivism).

In concert with the cybernetic and neocybernetic formalizations of political communication and governmental operations of feedback control, the neoliberal program ushered in by Hayek in the 1940s offers not simply a revision but a positive rebuttal of the classical liberal notion of personal freedom, as well as its insistence on maintaining a fire wall

\(^{146}\) The tendency for societies to evolve in a way that breeds evermore complex arrangements and institutional structures, in Hayek’s view, makes “decentralization” necessary. I look at this further in Chapter Three. I mention it here because the subsequent aggregation of the decentralized socius is, for Hayek, the sole *raison d’être* of the price system. “As decentralization has become necessary because nobody can consciously balance all the considerations bearing on the decisions of so many individuals, the co-ordinating can clearly be effected not by ‘conscious control’ but only by arrangements which convey to each agent the information he must possess in order effectively to adjust his decisions to those of others. And because all the details of the changes constantly affecting the conditions of demand and supply of the different commodities can never be fully known, or quickly enough be collected and disseminated, by any one center, what is required is some apparatus of registration which automatically records all the relevant effects of individual actions and whose indications are at the same time the resultant of, and the guide for, all the individual decisions. This is precisely what the price system does under competition, and what no other system even promises to accomplish.” Or, in a nutshell, “The more complicated the whole, the more dependent we become on that division of knowledge between individuals whose separate efforts are co-ordinated by the impersonal mechanism for transmitting the relevant information known by us as the price system…this method of solving the economic problem by means of decentralization plus automatic co-ordination” (Hayek, *Road to Serfdom*, 55–56).

\(^{147}\) Characteristics that we know refer to as “swarm intelligence” or “emergent behavior” factor significantly in Hayek’s theory of abstract rules. Such rules, he notes, apply equally to humans, animals, and even information-processing learning machines. To the scientist of complexity, “It does not matter… whether the individual members which make up the group are animals or men” (Hayek, *Studies in Philosophy, Politics, and Economics*, 66). In any essay first published in French translation of *Studies in Philosophy, Politics, and Economics* in 1967, titled “The Results of Human Action but not of Human Design,” Hayek goes further to single out among the many weaknesses of Cartesianism its perpetuation of the ancient Greek’s “misleading division of all phenomena into those which are ‘natural’ and those which are ‘artificial’” (Ibid., 96).
between the sphere of the market and that of the state.\textsuperscript{148} One of the most important influences of the early German ordoliberal and American neoliberal movements, Walter Lippmann recognized the necessity of formally articulating a positive “method of freedom” that could rescue liberal democracy from the dual threats of totalitarianism and capitalist oligopoly. This new form of freedom would be constructed in tandem with new “forms of control… compatible with the variability, the complexity, and the dynamic character of the capitalist order.”\textsuperscript{149} Lippmann’s \textit{The Good Society} had a tremendous impact on Hayek’s thinking, especially as it prompted Hayek to move away from the specific debates between neoclassical and Austrian economics towards more expansive political and social themes.\textsuperscript{150}

As both Lippmann and Hayek observed, classical liberal political economy had no remedy for the unique problems facing the industries, firms, laborers, and consumers in the early twentieth century. By then, accelerated processes of social massification, the amplification of machine power, and large-scale automation had ridden roughshod over the quaint, decentralized marketplace depicted by writers like Smith and Ricardo.

But what is a market? Mirowski argues that, from the start, neoliberals have been largely unwilling to address the question of market ontology.\textsuperscript{151} Like the early cybernetic technique of “black-boxing” anything pertaining to the essence and interior life of a system, neoliberalism’s hypotheses, models, and mandates tend to focus not on \textit{what} markets are but

\textsuperscript{148} It seems clear to me that Hayek’s concept of “government” is more or less the same as the cybernetic concept, as explained by Bateson (see note 56 above) and others, of government as a “steering” system. For Wiener’s original articulation of cybernetics with respect to governmentality, see, Wiener, \textit{Cybernetics}, 19; and Wiener, \textit{The Human Use of Human Beings}, 15. In \textit{The Constitution of Liberty}, which I take up in more detail elsewhere, Hayek himself describes the market as a “steering mechanism” (Hayek, \textit{The Constitution of Liberty}, 282).

\textsuperscript{149} Lippmann, \textit{Method of Freedom}, 69. Lippmann is a profoundly important figure in the early history of neoliberalism, especially in France, though he quickly distanced himself from the direction of the movement and, consequently (as reproduced here), has been relegated to footnotes in most commentaries.

\textsuperscript{150} For Hayek’s appreciation of and comments on, see especially Hayek, \textit{Studies in Philosophy, Politics, and Economics}, 199n3.

\textsuperscript{151} Mirowski, \textit{Never Let A Serious Crisis Go To Waste}, 55.
on how they behave. As if to suggest that refusing to say what constitutes a market is actually a requisite for optimal market functionality, Hayek, in a widely reproduced 1967 paper titled “The Confusion of Language in Political Thought,” differentiates between the widely accepted definition of economy as a “deliberate arrangement… of resources in the service of a… hierarchy of ends,” and what he calls catallaxy, derived from the Greek verb katallatein, which “significantly means not only ‘to exchange’ but also ‘to receive into the community’ and ‘to turn from enemy into friend.’”\textsuperscript{152} Whereas the former term aptly describes the organizing principle of households, firms, governments, and other such bounded command structures, the latter designates “the order of the market which spontaneously forms itself.”\textsuperscript{153} Though the word “catallaxy” itself arrives rather late in Hayek’s thinking, it seems clear that his earliest efforts in social epistemology, which antedate “Confusion of Language” by some three decades, hang on his ability to extricate his own concept of and scientific approach to markets from those of the economic orthodoxy. Catallactics stands apart insofar as it rejects the standard criteria for evaluating economic performance; the “economic calculus,” while aptly designed to measure the efficacy and efficiency of locally contained “ordered structures,” does not hold for the market as a whole. Whereas national, organizational, and household economies direct their energies to clear-cut ends (such as growing the Gross Domestic Product, improving profits, or saving for retirement), for Hayek, “the ends which a catallaxy serve are not given in their totality to anyone, that is, are not known either to any individual participant in the process or to the scientist studying it.”\textsuperscript{154} The market, in other words, is treated as a pure medium—a means without end, or else

\textsuperscript{152} Hayek, \textit{New Studies in Philosophy, Politics, and Economics.}, 90.
\textsuperscript{153} Ibid., 90.
\textsuperscript{154} Ibid., 90n21.
a means elevated to the status of end.

Herein lies one of the most innovative and revelatory features of the neoliberal project with respect to social science methodology, as well as governmental technique: the absolute dissolution of the orientation point or telos. For classical liberals like Smith and Mill, the “wealth of nations,” diversely defined though it may have been, served both as underlying object of inquiry and raison d’être for commercial markets. Hayek, by contrast, dispenses with historically contingent categories of wealth and nation alike and remakes the market as the premier site for all variety of exchange. His expanded vision of the catallaxy accommodates not only commodity and currency transactions but virtually any instance of meaningful, non-coercive participation in social life. Catallactics enframes and explicates any signal capable of producing a change in one’s conduct, ideas, or preferences. And so, more than a specific property assigned to material goods, ex-changeability becomes a de facto condition of human existence. Homo economicus—the animal that perpetually changes (itself) out.

To put it in slightly different terms, the end becomes nothing more than the cultivation, maintenance, prolongation, diversification, and extension of means. It is with this in mind that neoliberalism conceived of in the context of the posthuman sciences dovetails rather neatly with neoliberalism conceived of as a phase of capitalist evolution dominated by financial markets. David Harvey, for example, describes neoliberalization in terms of “the financialization of everything,” as evidenced by its quintessential tactics of “securitization,” increased speculation, capital flight, and the sweeping metamorphosis of “the U.S. imperial tradition” into a program for the liberalization of international credit and
financial markets.\textsuperscript{155} From a more sociological perspective, Donald Mackenzie charts the ways Milton Friedman’s arguments in favor of flexible exchange rates and currency futures, dating from the early 1950s, led directly to the end of Bretton Woods regime and the opening of new money markets on the Chicago Mercantile Exchange.\textsuperscript{156} Christian Marazzi, finally, understands contemporary capitalism in terms of a reprioritization of valorization processes which finds power moving away from the sphere of production to that of circulation. In this post-Fordist mode Marazzi observes a widespread disinvestment in constant and variable capital matched by amplified “investment in \textit{apparatuses} [that] produce and capture value produced outside of directly productive processes.”\textsuperscript{157} The \textit{means-without-end} character of the Hayekian catallaxy likewise shifts the priorities of the market-function away from tangible commodities and acts of material production and consumption and towards the circulation of prices and information.\textsuperscript{158}

Subsequent chapters will further explore neoliberalism’s overhaul of the economic subject, whose rationality can no longer be taken for granted and whose supposed self-interest dissolves into mathematical functions that preempt the formation of any innate, immutable sense of self. Specifically, we will observe how contemporary digital media cultures have come to epitomize the processes by which the individual, no longer a \textit{sui generis} case, disintegrates into an infinitely modular mesh of connections, capabilities, biases, and

\textsuperscript{155} Harvey, \textit{A Brief History of Neoliberalism}, 27–29, 32–33, 116, 168. Duménil and Lévy make a similar case linking neoliberal philosophy and governmentality with the rise of financial capitalism in \textit{Capital Resurgent} and \textit{The Crisis of Neoliberalism}.

\textsuperscript{156} \textit{An Engine, Not a Camera}, 146–148. Mackenzie powerfully contends that these and other emerging financial markets embody many of the ideals of “distributed cognition” long championed by the likes of Hayek as well as certain proponents and practitioners of artificial intelligence research (162).

\textsuperscript{157} \textit{Violence of Financial Capitalism}, 48, 54. See also his related discussion of the “capitalist colonization of the sphere of circulation” beginning in the 1970s (Ibid. 64).

\textsuperscript{158} This goes a long way towards explaining the current hegemony of the so-called FIRE sector—financial services, insurance, and real estate—which I address, along with more of Marazzi’s work, in Chapter Three.
desires. The present chapter, continuing its pursuit of the posthuman sciences, will bracket the question of the subject in order to examine more closely that new object of scientific knowledge that appears in the wake of the first wave of cybernetics. In social theory, in biology, in communications and computer science, and in media studies, as elsewhere, an indeterminately organized, essentially complex, and radically polymorphous object is today beginning to supersede that which the prior accretion of scientific analysis had come to know as the human being.

VI. UNRAVELING THE SOCIAL: HAYEK, LATOUR, AND THE POLITICS OF THE POSTHUMANIST TURN

That, as far as coherent and codified research agendas go, actor-network-theory exemplifies the posthuman turn within the human sciences, as it reaffirms the objects and methods of long-marginalized sociological practices and, ultimately, of neoliberal market theory.

Bruno Latour’s groundbreaking work in science and technology studies has informed nearly every contemporary attempt to define the posthuman. Accordingly, this chapter’s thesis about Hayek’s proto-posthumanism would remain direly incomplete without addressing the extent to which his “subjectivist” methodology and overarching concept of the social keenly foreshadows Latour’s own recent recapitulation of the far-reaching consequences of “actor-network theory” (ANT) on the discipline of sociology.

For Latour and Hayek both, the social scientist must understand not just that she is inextricably embedded in the very systems she observes, but that—in turning her

159 Hayles, for example, draws a parallel between Latour’s famous case that “we have never been modern” and her own conclusion, arrived at by way of a “seriated history of cybernetics,” that “we have always been posthuman” (Hayles, How We Became Posthuman, 291). For Clarke, the “communicational vision” of the actor-network theorist recasts the human as “at once nonmodern and posthumanist” and helps push the figure of the posthuman “beyond the vogue for the cyborg and other cybernetic mash-ups of the organic and the mechanical” (Clarke, Posthuman Metamorphosis, 53-4). Wolfe, in his introduction to What is Posthumanism?, points out that we have come to take more or less for granted Latour’s sensibility as well as his most powerful concepts (Wolfe, What is Posthumanism? xxiii).
observations into statements, explanations, theories, and facts—she herself actually produces those systems. Hayek stresses, very early on, this essential reflexivity of social science. For him, to know something about social action is to know also oneself, for being able to interpret the actions of others requires that one continually reflect upon one’s own perception of, conceptualization of, and response to environmental stimuli of all kinds. We can even make the case that Hayek anticipates the rise of the social study of science and technology more generally, insofar as he posits sociality as the *sine qua non* of all scientific communication.

Even after the natural sciences have collected their data and achieved their conclusive results—and regardless of whether these are the natural sciences of nature or the “natural sciences of man”—“the facts of our mind must remain not only data to be explained but also data on which the explanation of human action guided by those mental phenomena must be based.”

The neocybernetic problem of the observer, in other words, becomes in Hayek’s work—well before that of even Foerster or Bateson—the central problem for the formulation of scientific methodologies. Especially in relatively alien environments, the social scientist should discover that, for making sense of the behavior of others, “it is... the most general and abstract [concepts] which remain helpful longest.”

“My knowledge of the everyday things around me,” he continues, becomes much less useful than “my understanding of what I mean by a means to an end, by food or a weapon, a word or a sign, and probably even an exchange or a gift.” Unlike the objective facts of the physical sciences, the facts of the social sciences are only understandable because observers and

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160 *Counter-revolution of Science*, 24.
161 *Individualism and Economic Order*, 66.
162 Ibid., 66–67.
observed alike possess “that common [mental] structure which makes communication possible.” Thus, for Hayek, what the social scientist does is “in a logical sense exactly the same” as what her subjects do—that is, interpret and respond to environmental signals, partially through conscious decisions but predominantly according to abstract rules only tacitly understood. The only difference, at the end of the day, between the scientist and her subject is that, where the latter, confined to “everyday rules and speech,” leaves concepts and customs “concealed and vague,” the former overlays a specialized meta-language to make “explicit” those fundamental conditions for social action.

Latour, coming out of a completely different sociological tradition, and seemingly without knowledge of (or at least any evident regard for) Hayek’s work, arrives at practically identical conclusions. In Reassembling the Social (2005), Latour supplies, in the words of the book’s subtitle, “An Introduction to Actor-Network-Theory” that doubles as something of a career retrospective. His overarching objective here is to “redefin[e] sociology not as the ‘science of the social,’ but as the tracing of associations.” Against the mainstream sociological tradition, which deploys “the social” as a universal explanatory force, Latour’s “sociology of associations” insists that “the social” is in fact what emerges over the course of an observation. It is not “some glue that could fix everything including what the other glues cannot fix,” but rather “what is glued together.” “Society,” Latour maintains, “far from being the context ‘in which’ everything is framed, should rather be construed as one of the many connecting elements circulating inside tiny conduits… With some provocation, [Actor-Network-Theory] could use as its slogan what Mrs. Thatcher famously exclaimed (but for

163 Counter-revolution of Science, 28-9.
164 Hayek, Individualism and Economic Order, 63.
165 Ibid., 66.
166 Latour, Reassembling the Social, 5.
167 Ibid., 4-5.
very different reasons!): “There is no such thing as society.”

Thatcher’s notorious remark was first expressed during a discussion of entitlement reform in a 1987 interview for the British weekly Woman’s Own. Though her political motivations appear to be completely foreign to Latour’s meta-sociological enterprise, the similarity between their two lines of thinking is hardly coincidental and, I believe, much more revealing than Latour lets on. Having worked through Hayek’s writings on social scientific method, we can bring this unexpected relationship into clearer focus. Thatcher, we know, studied and cited Hayek with great enthusiasm, and her politics often, but not always, drew Hayekian interpretation. She and Hayek were personally acquainted; he met her informally at 10 Downing Street more than once. And legend has it that, once, the Prime Minister, vexed by a run-of-the-mill policy dispute, closed a cabinet meeting by waving around Road to Serfdom and exclaiming that “this is what we believe!”

The politician and the political philosopher certainly diverged often enough on policy solutions, but their respective understandings of what constitutes the social fabric remained entirely of a piece. Echoing Hayek, Thatcher’s point about “society”—or rather its “non-existence”—is that the concept is meaningless for anyone whose job involves dealing with the actual structure of relationships and interconnections between people and things and values at any given time. What she seems to be rejecting is the idea of a “social” framework anterior to its contents, or a universal “social” explanation that could somehow

168 Ibid., 5.
169 Keay, “Aids, Education and the Year 2000?” 8–10. The printed interview actually takes some liberties with the transcript, as noted by the editors of Thatcher’s online archive (Margaret Thatcher Foundation, Interview for Woman’s Own).
170 See Ebenstein, Friedrich Hayek, 290–296. In an interview from the mid-1980s, Hayek notes in passing an important difference between his and Thatcher’s political perspective. “I’m becoming a Burkean Whig,” Hayek says. “I think Burke was fundamentally a Whig; and I think Adam Smith was. Curiously enough, Mrs. Thatcher—I’m sure I’ve never told her yet. The last time I met her she used the phrase, ‘I know you want me to become a Whig; no, I am a Tory.’ So she has felt this very clearly” (Hayek, Hayek on Hayek, 141).
be in force prior to any concrete knowledge of the local situation to be explained. The policy maker should, thus, refrain from appealing to something called “society” when attempting to justify a particular governmental action, because doing so would be to oversimplify the complex mingling of forces, signals, and effects that constitute the body of the governed. In Latour’s words, society is, rather, “what is glued together.”

In her *Women’s Own* interview, Thatcher goes on to describe how, in the absence of “society,” “there is a living tapestry of men and women and people… and the beauty of that tapestry and the quality of our lives will depend upon how much each of us is prepared to take responsibility for ourselves and each of us prepared to turn round and help by our own efforts those who are unfortunate.” The sort of cutthroat expenditure reduction that characterized Thatcher’s reign, of course, belies the pseudo-inspirational rhetoric on display here. But I find the epistemological and socio-ontological ramifications far more difficult to reckon with, in part because they have as yet hardly been identified as such, in part because the ultimate picture of reality and knowledge and social life Thatcher offers seems so consistent with that arrived at by the most influential architects of posthumanist thought.

What Thatcher, evoking bygone centuries, names a “living tapestry,” Latour, invoking cutting-edge technology, calls a “network” of “associations.” And like the Prime Minister, the “sociologist of associations” rejects the commonplace notion that “social ties” are what keep that tapestry, that network, in tact; the ties, Latour stresses, “are themselves non-social.” “The social,” he says, “is not a type of thing either visible or to be postulated. It is visible only by the traces it leaves when a new association is being produced between

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172 Ibid.
173 See, e.g., Latour’s definition of a “network” as “a string of actions where each participant is treated as a full-blown mediator” (Ibid., 128).
elements which themselves are in no way ‘social.’” The sociologist’s task, accordingly, is to produce an account of those “traces,” to follow the various vectors of agency between objects and people, and so to continually reconstruct the ever-shifting grounds of sociality. “There is no society, no social realm, and no social ties, but there exist translations between mediators that may generate traceable associations.”

Again, Latour’s sweeping reappraisal of objects and methods of social science proves more or less congruent with Thatcher’s own Hayekian outlook, the latter’s warp and weft displaying as noise and signal in the “networks” of the former. To critics of neoliberalism, the political techniques and governmental logic yielded by ANT should be especially troubling. Just as Hayek’s distributive social epistemology yields staunch philosophical and political resistance to central planning and rationalistic design, Latour’s proudly announces itself as “something especially stupid”—something “that prides itself in being so meticulous, so radical, so all encompassing, and so object-oriented as to be totally impractical.” ANT, in other words, presents itself as an impediment to sociology as usual. Its endless “tracings” emerge as so many thorns in the side of that disciplinary trajectory—the “sociology of the social”—which Latour describes as having attained a certain intellectual and political hegemony through the work of Emile Durkheim. And, though Latour pitches this as a relatively limited, intra-disciplinary coup, the incessant cross-pollination between social science and social policy, I believe, demands a more catholic approach.

Recalling Durkheim’s disputes with and clear-cut victory over Gabriel Tarde around the turn of the twentieth century, Latour upholds that Durkheim “had abandoned the task

176 Ibid., 122 (emphasis added).
of explaining society by confusing cause and effect, replacing the understanding of the social link with a political project aimed at social engineering.” From the privileged perch of the professional sociologist, who alone is capable of penetrating this “special domain of reality” called “the social,” Durkheim, on Latour’s read, implies that social institutions determine the shape of society; to the contrary, Latour (like Hayek before him) contend that it is out of the throng of collective human existence—evolving, mutating, growing evermore complex—that those social institutions (political systems, markets, etc.) emerge. As the second-order and socio-cyberneticists would say, the process is “non-katascopic,” unfolding not top-down but from the bottom up. Only when the sociologist comes along to retrace the connections that hold those institutions together does that constitutive throng come to be recognized as something called “society.”

In his role as Durkheim’s principal rival, Tarde figures as among the most important, but also least appreciated, precursors to ANT. In Tarde’s work, Latour uncovers a concept of “the social” antithetical to the one that professional sociology came to embrace over the course of the twentieth century. A “link,” a “connection,” or even a “circulating fluid,” Tarde’s “social,” had it been earlier adopted, would have produced a significantly different sort of discipline—“a science accounting for how society is held together.” Rather than produce “political projections,” the sociologist would simply “follow” the trail of the diverse effects that actors, objects, and ideas have on one another. This version of social science, according to its advocates, proceeds more humbly, as it suggests an obverse temporal relationship to its field of study. Rather than treat society as something to be projected and

177 Ibid., 13.
178 As Latour puts it, “That Tarde was utterly defeated by sociologists of the social to the point of being squeezed into a ghostly existence for a century does not prove that he was wrong” (Ibid., 13–14).
179 Ibid., 13.
designed, this “sociology of associations” sees it, retrospectively, as something formed spontaneously. For Tarde and Latour, as for Thatcher and Hayek, society can only be recognized as such in the past tense, after the fact, and never without myriad mediators— instruments, institutions, statements, and techniques.

Latour puts special emphasis on Tarde’s rethinking of economics and its centrality to his unsung social-theoretical innovations. This move of Latour’s nicely illustrates the congruity between his and Hayek’s respective conceptions of social science. Rather than continue on its path of producing evermore “vague metaphor[s] to describe the calculation of interests,” economics, as Tarde discerned at the dawn of the twentieth century, could pioneer the study of innovation in general and thereby stake out the real “growth area of social theory.” In 1895’s *La logique sociale*, Tarde makes plain his investment in economic methods, distancing his project from that of classical liberalism, which he describes as “a passing accident or a childhood illness… of the nascent political economy.” His interests lie not with “economic science” in particular, he says—that is, not with what we now categorize broadly as neoclassical economics—but with a more general “economic point of view [that is] applicable to all branches of human behavior.” In one pithy line, Tarde uncannily foretells of not only Hayek’s late turn towards the evolution of jurisprudential norms and institutions, but also Becker’s indiscriminate application of economic analysis to all matter of social problems, from deviance to prejudice to divorce: “[T]he economist

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182 Ibid.
begins as a statesman and ends up as a jurist and moralist.”¹⁸³ For Tarde, the strength of the “economic point of view” lies in its “consideration of human activity from its quantitative and measurable side.”¹⁸⁴ The major hurdle for sociology, in Tarde’s telling, is its failure to establish rigorous techniques for the measurement of “internal attitudes” and “dimensions of the soul,” “real quantities” that the economist rather successfully accounts for; “he summarizes everything in the idea of wealth… [which appears as] the incarnation of a combination of desire and belief.”¹⁸⁵

By retailoring sociology to the requirements of a revamped economistic toolbox, Tarde foreshadows that quintessential Hayekian problem—the “economic problem of society,” which is “not merely a problem of how to allocate ‘given’ resources [but]… a problem of the utilization of knowledge which is not given to anyone in its totality.”¹⁸⁶ The solution to this “problem,” which transcends the scope of traditional economic analyses of common wealth and rational investment, involves a novel understanding of the market as a medium through which circulate not only money, goods, and services, but essentially everything relevant to the evolutionary development of a culture—most importantly, information and knowledge that interminably elude our conscious control.

As Hayek has it, “[T]he knowledge of the circumstances of which we must make use never exists in concentrated or integrated form but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess.”¹⁸⁷ What the market-makers, and so too the economist, must be ever mindful of—and what both mainstream sociology (contra Latour) and neoclassical economics (contra Hayek) completely

¹⁸³ Ibid.
¹⁸⁴ Ibid., 108.
¹⁸⁵ Ibid., 40–1, 108.
¹⁸⁶ Hayek, Individualism and Economic Order, 78.
¹⁸⁷ Ibid., 77.
disregard—is precisely this inevitable and constant dissipation of that very thing that keeps
the whole system intact. In a radical departure from earlier models, the market—as
ever envisioned by Hayek, and before him, from a slightly different perspective, by Tarde—
becomes a real-time “communication system,” a means of broadcasting and relaying
information, in the form of “tacit knowledge,” about virtually every relevant and regular aspect
of a given “environment” or “situation.”

The important thing to remember is that the market is efficient; at bottom, it saves
us time, since we never need to know in any explicit way what all those relevant details
actually are. The prices that we encounter in our everyday enterprising convey, in a highly
condensed form, all the “situational” and “environmental” information we might need to
make decisions and, in turn, have those decisions recorded, aggregated, and recombined to
form the constituent data points of social science.

Insofar as we understand the market as a communication system, as Hayek and
Latour (by association) encourage us to do, we must understand its language to be that of
prices formed, if not “freely” and “naturally,” then at least in ways that optimize the
interplay of expectation and chance. What any price expresses or indexes—its signifié—is the
overall health of market competition at a given moment in time. Prices give us a measure of
the field of play and incentivize particular actions and attitudes. Each price is a snapshot of
all the quantities of supply and demand germane to the becoming-visible of some commodity

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188 C.f. Prigogine’s work on self-organization in dissipative, far-from-equilibrium systems, discussed in the
Introduction.
189 Hayek, New Studies in Philosophy, Politics, Economics, and the History of Ideas, 34.
190 Hayek fleshes his point out as follows: “The marvel is that in a case like that of a scarcity of one raw material,
without an order being issued, without more than perhaps a handful of people knowing the cause, tens of
thousands of people whose identity could not be ascertained by months of investigation, are made to use the
material or its products more sparingly; that is, they move in the right direction” (Hayek, Individualism and
Economic Order, 87).
or underlying asset.\textsuperscript{191}

At the same time, the market also becomes the lynchpin of cultural evolution and the phylogenetic (intergenerational) transmission of knowledge,\textsuperscript{192} which is to say that “following” links or “tracing” networks amounts, in the end, to reconstructing the social conditions for the spontaneous emergence of the new.\textsuperscript{193} This practice neither universalizes its findings nor actively pursues goals of its own beyond simply increasing connections, information, and means of quantification. Its principal activity remains purely retrospective, which is what Latour means by his charge that mainstream sociology “confus\[es\] cause and effect,” and what Hayek means in describing theory-formation in the social sciences—“never… the outcome of a deliberate process, not something at which the mind can deliberately aim, but always a discovery of something which already guides [its] operation.”\textsuperscript{194}

That this anti-interventionist theory of the social sciences should arrive by way of an expansion of a particular style of economic analysis is something that Hayek had suggested as early as the 1940s (and which we will see particularly amplified in Becker’s prodigious application of economistic techniques). When Latour recovers this very same argument in Tarde’s long-ignored work more than half a century later, he seems not to compute its resonance with neoliberal thought. Both Tarde and Hayek offer a stark alternative to modern social theory as it has been passed down from Durkheim to postwar welfare theorists to

\textsuperscript{191} In Tarde’s expansive definition, a quantifiable feature or phenomenon is anything “capable of increasing or decreasing” (Clark, \textit{Gabriel Tarde}, 109). Tarde’s view will further inform my argument in Chapter Three regarding new analytics tools for measuring and evaluating attention and behavior online.

\textsuperscript{192} This because cultural evolution and phylogenetic transmission can be conceived of as being rooted in supply and demand in general, or the allocation, at a collective level, of limited (genetic, mnemonic) resources towards competing ends.

\textsuperscript{193} It might at first seem as though the language and utility of the market as a medium have fairly limited potential, but Hayek’s diffuse influence implores us to see things otherwise, to come to grips with the ways in which nearly any human activity can be registered in terms of supply and demand, as more or less of some measurable variable.

\textsuperscript{194} Hayek, \textit{New Studies in Philosophy, Politics, Economics, and the History of Ideas}, 46
their sundry social democratic avatars today; that Latour rallies around the former rather than the latter is little more than an accident of intellectual history. A thorough excavation of the emergence of a posthuman episteme demands that we underscore the complementarity of these projects.

A recent book on Tarde’s “economic anthropology,” co-authored by Latour and Vincent Antonin Lépinay, once again evinces assent to neoliberal epistemology, even if it does so inadvertently. The book’s opening sentence echoes the rhetorical tropes Latour deploys in *Reassembling the Social*’s introduction to ANT’s reformation of sociological thought: “In order to understand Tarde’s economic anthropology,” say Latour and Lépinay, “we must first accept a complete reversal of our habits: nothing in the economy is objective; all is subjective…and that is precisely why it can be rendered quantifiable and scientific… on condition that we modify what we expect from science and what we mean by quantifying.” The effect of Latour’s excavation of Tarde, in the end, is not unlike that of Clarke and Hansen’s vindication of von Foerster discussed above. Restaging these particular intellectual debates gives a false impression of the superannuated as state-of-the-art. But neither the lack of recognition of Tarde by mainstream sociology, nor the widespread ignorance of second-order systems theory on the part of artists, writers, and scholars in the posthumanities, stands as sufficient evidence of a more general gag on their methods and ideas. In fact, the methods and ideas that these contemporary theorists present as having been long-suppressed have in fact found themselves folded rather seamlessly into the information ecosystem and market-minded governmentality of twenty-first century capitalism. (It is as if Christ, summoning Lazarus out from his tomb, discovered that the man had been

196 This will be the overarching hypothesis of Chapter Three.
metempsychotically transposed.)

In the final analysis, by reenacting this Tardean “reversal,” which supplements the classical measure of wealth by prioritizing the economic functions of desire, enjoyment, and belief, Latour and Lépinay effectively corroborate Hayek’s own methodological innovations. It should thus come as little surprise that Hayek himself references Tarde favorably, albeit only in passing, on several occasions, though the evidence is too scant to count Tarde as a consequential influence. In an insightful aside, Latour and Lépinay point out the common ground between Tarde and the Austrian marginalists, “whose point of departure”—foretelling Hayek’s own—“is anchored in individuals.”\textsuperscript{197} Unfortunately, the link between Tarde, as the partisan of Spontaneity,\textsuperscript{198} and the proto-libertarian Marginalists receives no further attention; oddly, Latour and Lépinay seem to view it as an insignificant diversion from their overarching goal of demonstrating Tarde’s inestimable “originality.” The irony here should not go unnoted: in order to prove Tarde’s originality, and so too to underscore (and lament) the lack of influence his ideas have had on social theory in the twentieth century, the authors are forced to hastily dismiss those very affinities that could decisively inform our latter-day reception of Tarde’s work. In other words, Latour and Lépinay, somewhat contrary to their intentions, tend to obstruct any political perspective on Tarde that would be capable of accounting for the neoliberal turn, and, more specifically, for the quiet triumph of Hayek’s epistemological and methodological techniques.

\textbf{VII. CONCLUSIONS: PHYSICAL, SOCIAL, AND POSTHUMAN SCIENCES: THE ECONOMISTIC DIFFERENCE}

\textsuperscript{197} Ibid., 7.
\textsuperscript{198} C.f. Clark, \textit{Gabriel Tarde}, wherein Tarde’s place in the history of Spontaneism is defined in line with his opposition to Cartesianism.
That the reinvention of economics and economistic techniques by Tarde and then much more rigorously by Hayek precipitated the overcoming of strict delineations between physical and social science. The discovery of complexity and the “primacy of the abstract” encapsulate the new posthumanistic episteme and determine the methods appropriate to inscribing and explicating the posthuman as an object and subject of scientific knowledge.

Without pursuing Tarde much beyond the scope of what drives Latour, one of our quintessential posthuman scientists, I would like once more to underscore my chief contention on this front—that Tarde’s economic anthropology, for the most part sidelined by a century of professional bourgeois social science, finds an important ally in the market-oriented social theory, or catallactics, proffered by Hayek. At the heart of their alliance is a concentrated effort to redefine the social and human sciences as autonomous from, and perhaps even primary with respect to, the natural sciences. This has, of course, been a foremost prerogative for Western philosophers of science for more than a century.\textsuperscript{199} In his 1883 opus \textit{Introduction to the Human Sciences}, Wilhelm Dilthey presented the first truly comprehensive and systematic overview of the subject. Fittingly, he sets his sights directly on Auguste Comte’s positivist sociology, which appears as a sort of ur-form of the “sociology of the social.” Built upon “a crude naturalistic metaphysics,” Comte’s sociology, in Dilthey’s words, “subordinated the historical world to the system of the natural sciences [and]... the method of studying the human world... to the methods of the natural sciences.”\textsuperscript{200} This strategy of “subordination,” which we earlier saw Hayek deride as naively “scientistic,” appealed to Comte and his followers for its unambiguous appurtenance to the intuitions and ambitions of humanistic social planning that were propelling the project of industrial modernity.

Dilthey, citing an influential lecture of his rival, recounts how “Comte explicated

\textsuperscript{199} Before that, it had shaped the program of “moral science” as outlined by eighteenth-century Scottish philosophers like Hume, Smith, and Ferguson.

\textsuperscript{200} Dilthey, \textit{Introduction to the Human Sciences}, 154, 56 (emphasis added).
‘the necessary direction of the total nexus of human evolution,’ [which] served him as the principle for regulating society.” The counterargument, as Dilthey delivers it, hinges on the refinement and restoration of those subjectivist methods that positivism had triumphantly cast asunder. Anticipating both Tarde and Hayek, Dilthey challenges Comte on two assumptions in particular: the physiological reduction of “psychic states,” and the designation of “inner perception” as “impossible and unproductive” from the standpoint of science. A full century later, these same themes—running from Dilthey to Tarde to Hayek—appear on prominent display in Charles Taylor’s collected essays on philosophy and the human sciences. Introducing his reader to the “tightly related agenda” behind his various critical studies of behavioralism, atomism, cognitive psychology, and artificial intelligence research, Taylor highlights a common thread running through the propositions of his seemingly disparate intellectual opponents—“a certain metaphysical motivation,” “an allegiance to ‘naturalism,’” which accords “paradigm status… to the natural sciences as the models for the sciences of man.” He contends that, beginning with the “cosmological revolution” of the seventeenth century, Western science has fostered an “ideal of disengagement” coupled to an image of “liberation through objectification.” Over the course of the following centuries, the importation of naturalistic methods into the human and social sciences precludes any recognition or explanation of such phenomena as Taylor, the consummate communitarian, would rather see brought to light—human agency, personhood, self-awareness, and “the common meanings… embedded in our institutions

201 Ibid., 156, citing Comte, *Cours de philosophie positive*, vol. 4, p. 631.
202 Ibid., 155.
204 Ibid., 5.
Behavioralism, cognitive psychology, and the computer model of intelligent life, according to Taylor, all elide the most fundamental aspect of that very figure—the human being—they propose; “to be a full human agent, to be a person or a self… is to exist in a space defined by distinctions of worth.” Like Dilthey’s “inner perception,” Hayek’s “mental structures,” and Tarde’s “quantifiable” qualities (to which we return below), Taylor’s concept of “distinctions of worth” emphasizes the social and sociological relevance of that which cannot be objectively grasped and universally applied.

It would thus seem that the history of the philosophy of human sciences, of which we have observed but a meager sampling, is rife with critiques of rationalist, objectivist, and naturalistic techniques for dealing with the behavior and institutions of such an evasive species. Tarde and Hayek nevertheless stand out, for each assigns economics a privileged post in his effort to redefine the proper object and methods of social science. Along the way, each also demands a radical rethinking of the constitutive concepts and techniques of economics itself, steering the science away from traditional analyses of wealth and interest and instead towards problems of communication, network dynamics, and cultural transmission.

_The Road to Serfdom_ was Hayek’s unexpected, perhaps even unwanted, ticket to stardom (the book had been abridged by _Reader’s Digest_ and sent out to some five million homes, while _Look_ magazine and General Motors teamed up to disseminate an even shorter cartoon version that opens with postwar utopian well-wishing and ends, just eighteen panels

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205 Ibid., 2–3.
206 Ibid., 3.
later, with our well-wishers standing in front of a firing squad). But, after two decades of dedicated economic research, the 1940s found him preoccupied in the main by problems in the history and philosophy of social science. Among his chief concerns here were the methodological delineation of social from physical or “natural” science, the preservation of the autonomy and primacy of the former with respect to the latter, and the search for “general principles” or “abstract rules” capable of explaining the formation of social institutions like markets and governments and moral codes.

In short, Hayek sets out to understand how epistemological evolution and the orderly emergence of new social forms can and do occur without any overarching, all-seeing authority consciously or rationally directing their courses. His preoccupation with operations of chance, the interplay of freedom and control, and the abstract rules of spontaneous emergence put Hayek in touch with even more recent advances in the sciences of chaos and complexity. Through his investigations, Hayek develops a radically “subjectivist” approach to the study of social networks consonant with the later projects of von Foerster, Maturana and Varela, in the science of cognition, and those of Luhmann and Latour in social theory. Hayek’s distributive model of knowledge places means above ends (the market is the message, we might say) and in many ways anticipates the eruption of comparative media analyses in late-twentieth-century humanities research. His preeminent concern for the complex

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207 The Look magazine cartoon version of The Road to Serfdom is available online (Ludwig von Mises Institute, “The Illustrated Road to Serfdom”). Notably, the archived edition comes from a reproduced booklet published by General Motors, Detroit, as volume 118 in its “Thought Starter” series.

208 As the economic historian Bruce Caldwell emphasizes, Hayek’s thought on this point underwent a profound “transformation” during the 1950s, as he came through his Chicago encounters to a more thorough appreciation for the biological sciences and the “organized complexities” that emerge out of evolutionary theory. By the middle of that decade, according to Caldwell, “Hayek distinguishes among the various sciences, but now the dividing line is not between the natural and the social sciences but between those sciences that study relatively simple and those that study complex phenomena.” See Caldwell, Hayek’s Challenge, 301.

209 See my discussion, in the Introduction, of Hayek’s work in the context of complexity theories in physical and chemical sciences.
“whole”—and the orientation of the social epistemological field around this concern—puts Hayek squarely into the camp of early general systems theorists like Ludwig von Bertalanffy, who stands as an important precursor to autopoiesis with his prioritization of questions of the maintenance of order and structural organization in biological thought. In his seminal text, *General Systems Theory*, von Bertalanffy charts how, by the time of his writing in the late 1960s, “in all fields of knowledge… we are forced to deal with complexities, with ‘wholes’ or ‘systems.’” As he sees it, “This implies a basic reorientation of scientific thinking” as well as an admission that “in complex fields… we have to be satisfied with what the economist Hayek has justly termed ‘explanation in principle.’”²¹⁰

A 1968 symposium convened in Alpbach, Austria by the ex-communist novelist and journalist Arthur Koestler brought together von Bertalanffy, Hayek, and a number of prominent biologists, zoologists, cognitive and experimental psychologists, physicians, geneticists, and others with the aim of consolidating the methodological and conceptual breakthroughs in complex, holistic, and anti-mechanistic scientific thought. The “common target” of all these contributors, Koestler explains, “seems to be what von Bertalanffy called the robotomorphic view of man, or more soberly, the insufficient emancipation of the life sciences from the mechanistic concepts of nineteenth-century physics, and the resulting crudely reductionist philosophy.”²¹¹ Hayek’s talk at Alpbach, “The Primacy of the Abstract,” reveals the extent to which his thinking had become occupied by distinctively posthumanistic concerns. Here, he echoes many of the same themes that had been with him since the late 1930s and early 1940s, but he speaks not of the economic or social actor, nor even of the human, but of the “organism” and its self-constitution through “action patterns

which [certain] stimuli tend to evoke.”

212 Terms like economy and society likewise get replaced, chiefly by an emergent “environmental” perspective. And, bolstered by the new paradigm of information-processing machines, the macro theory of dispersed and fragmented social knowledge, which early on informed Hayek’s vehement attacks on economic planning, is here matched with a micro theory explaining how little “knowledge” actually informs our activities. “[A]ll our action must be conceived of as being guided by rules of which we are not conscious but which in their joint influence enable us to exercise extremely complicated skills without having any idea of the particular sequence of movements involved,” Hayek avers. 213 “[W]hat we call knowledge,” he continues, “is primarily a system of rules of action assisted and modified by rules indicating equivalences or differences or various combinations of stimuli.”

214 Questions of self-governance and control looms large over certain sections of “The Primacy of the Abstract,” and I will return to these in later chapters. For now, we should simply note the high regard for Hayek by his contemporaries in the natural and biological sciences and his eagerness to situate his longstanding concerns within the context of emerging intellectual trends that would go on to inform subsequent developments in socio-cybernetics and second-order systems thinking. All told, Hayek’s actual exchanges at various points in his career with the major theorists of cybernetic mechanisms and self-organizing systems appear as revealing signposts for his evolving posthumanism, but remain relatively insignificant compared to the overarching trajectory of his social theory. In articulating the eclipse of modernity and the rise of a figure to transgress or transcend the old Economic Man, Hayek’s thinking resounds time and again

212 In the name of consistency, I refer to the version of his talk reprinted in Hayek, New Studies in Philosophy, Politics, Economics, and the History of Ideas, 41.
213 Ibid., 38.
214 Ibid., 41.
in the increasingly acclaimed theories of autopoiesis, actor-networks, mediology, chaos, and complexity.

In the coterminous histories of neoliberalism and cybernetics, a whole new field of knowledge begins to open up. Much as sociology now plays host to new economic methods, psychology hardens its hypotheses with neuronal and chemical models, while the horizons of mythology and literary studies rapidly recede as the unambiguous languages of computing and the optimally efficient protocols of telecommunication networks set the scene for epoch-making narrative techniques and unprecedented forms of cultural transmission. It follows that what could once be called the human sciences no longer take as their principal object the human being; in its place has emerged a vast array of systems—systems of knowledge, prices, pulses, biochemical associations, and so on. This prioritization of aggregate behaviors and relational structures in all fields and at all levels suggests a sharp de-anthropocentric turn. Before the “network of networks” could fashion a new world out of nothing but raw data flows, before “crowd-work” platforms and smartphone “apps” could begin rejigging each waking moment into a fleeting opportunity to exploit some untapped revenue stream, a certain amount of cultural preparation had to take place; it was necessary for an epistemic breach to open the human sciences to the possibility of non- or hyper-human founts of agency, to the possibility of inorganic templates for biological activity, and, perhaps most importantly, to the possibility that one might set out to study—and so too to govern—a boundless and highly volatile collection of factors and forces and forms of life.

Hayek’s work in the late 1930s and early 1940s on critical epistemology and the philosophy of social science plays an important role in ushering in the objects and methods

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that would come to characterize the posthuman turn. The success of this work, long overlooked, can be clearly measured by the extent to which those objects and methods have come to be espoused by many of neoliberalism’s fiercest opponents, who too often mistake its “abstract rules” and indirect incentivization schemes for the strict anti-interventionism of its classical forebears.216 Once complex systems are seen, as Hayek sees them, as the dynamic results of non-conscious, undirected, spontaneous, omni-scalar processes, it becomes not only possible but somewhat urgent to argue, as Hayek consistently does, for a “positive” governmental function beyond the minimalist tasks of policing private property and enforcing contractual obligations.217

Among the posthuman epoch’s paradigmatic products, new media devices and telematic cultural practices have proven themselves to be rather ideal sites for governmental intervention on the neoliberal model, wherein freedom and control appear as affiliated (rather than opposed) terms. By elucidating the epistemological infrastructure of American neoliberalism, I hope to chart a particular genealogy of our posthuman present that will both compliment and complicate the extant record. Posthumanist scholars have identified the

216 An important recent work has made significant inroads on this front. Mirowski’s Never Let A Serious Crisis Go To Waste concludes with an extended critique of Occupy protestors for “their lack of acquaintance with the ideas of their nominal opponents… Indeed… the neoliberal worldview has become embedded in contemporary culture to such an extent that when well-meaning activists sought to call attention to the slow-motion trainwreck of the world economic system, they came to their encampments with no solid conception of what they might need to know to make their indictments stick; nor did they have any clear perspective on what their opponents knew or believed about markets and politics, not to mention what the markets themselves knew about their attempts at resistance.” In the end, “[w]hile brave activists had proven willing to invent new forms of civil disobedience, much of their tweeting and blogging tended to reveal a reversion to themes already promulgated by the usual suspects [of the neoliberal thought collective]… People do not generally imagine themselves trapped in a world that is upside-down relative to what they think they know” (Mirowski, Never Let A Serious Crisis Go To Waste, 327–329).

217 As Hunt and McNamara suggest, “Hayek believes the Great Society is prescriptive. Membership in the Great Society requires something more than the mere pursuit of one’s self-interest within a legal or customary framework that makes exchange possible” (Hunt and McNamara, Liberalism, Conservatism, and Hayek’s Idea of Spontaneous Order, 11). For William E. Connolly, “Defining the magic of the market as an indispensable starting point, Hayek hesitantly [proceeds to] explore multiple ways it must be supplemented, supported, or regulated by the state” (Connolly, The Fragility of Things, 60). C.f., Foucault’s lectures on Hayek and the early development of ordoliberal and neoliberal governmentality, which I turn to in Chapter Four.
contemporary digital media milieu, along with genomics and robotics, as an outgrowth of postwar cybernetics research into the physics of information, the formal properties of communications, and the mathematics of control. What these recent narratives tend to miss, however, is the fact that information and all that accompanies its theoretical formulation—communicative feedback, probabilistic reasoning, the play of entropic and negentropic forces—have been no less important to the social and human sciences.

Upon entering humanities discourses in the 1980s and 1990s, the concept of the posthuman long remained locked in a Manichean debate between the sharply critical militarist expositors—who peg the contemporary cultures of cyborgs, transhumans, and ubiquitous computing to the wartime research of Wiener, von Neumann, and others—and an increasingly prominent group of neocybernetic apologists, who hold fast to the emancipatory potential imbued in the thought of self-reflexive systems, autopoietic organization, and the project of “reconstructing deconstruction.” Out of this debate a general consensus seems to have emerged, which identifies the problematic and even iniquitous origins of cybernetic technoculture but doubles down on its ultimate promise by affirming and meticulously explicating the magic bullet of second-order systems. Though it emerged mainly out of first-wave tropes, Haraway’s figure of the cyborg, as “the illegitimate offspring of militarism and patriarchal capitalism,” ultimately anticipated the hope that later philosophers and critical theorists would hang on cybernetics softer, gentler, nature-friendly next-of-kin—second-order systems theory. Rather than put the various strands of cybernetics in touch with broader trends in social, political, economic, or intellectual history, the discourse on posthumanism has remained largely preoccupied by debates internal to

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218 In addition to works already discussed, see, e.g., Kay, *Who Wrote the Book of Life?*
first- and second-order systems theories. While this has been remarkably productive in many respects, one hidden side-effect has been to absent from the discussion any reference to political economy or even to the heuristic of governmentality that stood behind Wiener’s initial decision to give the name “cybernetics” to his new science of communication and control.

I have proposed a slightly different perspective, one that is neither posthuman nor posthumanist in orientation. By emphasizing the materialization of a new field of knowledge I have called the posthuman sciences, I have sought to present the emergence and manifold legacy of cybernetics within the context of signal shifts in the geopolitical and socioeconomic landscapes that have taken place over the latter half of the twentieth century. One aim here has been to illuminate the parallels between the rethinking of markets—their organizing principles, regulatory mechanisms, and constituent parts—by neoliberal political economists and legal scholars, and the various strides made by biologists, physicists, sociologists, computer scientists, management theorists, and others in their conceptualization of and methodological approach to complex, self-organizing systems. In the next chapter, I depart from the predominantly historical approach that I have pursued thus far in order to look at the ways in which the objects, concepts, and methods of posthuman knowledge get put into play within contemporary cultures. Financial instruments and telematic media technologies become important relays points in the circulation of this knowledge and, subsequently, in the reconstruction of the social along what we have begun to recognize as deeply Hayekian, neoliberal lines.
CHAPTER 3: ACTUALITIES OF NEOLIBERAL THOUGHT, OR, THE CULTURAL LOGIC OF POSTHUMAN CAPITALISM

This chapter argues that contemporary financial markets and telematic screen cultures have become operationally analogous in their actualization of neoliberal rationality and social thought. In order best to understand the governmental effects of both new media platforms and practices as well as what cultural critics have named the “financialization of daily life,”¹ we will extend our reading of “Chicago style” neoliberalism beyond Hayek’s macrological approach to examine the emerging and all-consuming micrological approach offered by “human capital” theorists Gary Becker and Theodore Schultz. This triangulation of new instruments of capitalist exploitation, new techniques within screen and media cultures, and new concepts of selfhood and sociality is admittedly a complicated theoretical task, but one that will prove immensely valuable, I think, for our continuing efforts to parse the meaning and efficacy of neoliberal thought, especially with regard to its preeminent theorists’ engagement with and adjustments to contemporaneous innovations in the sciences and technologies of communications and control. To frame this inquiry and aid in the cohesion of these disparate elements, we turn to Gilles Deleuze’s hypotheses on “control

¹ Randy Martin describes financialization in these terms: “Finance… presents itself as a merger of business and life cycles, as a means for the acquisition of self. The financialization of daily life is a proposal for how to get ahead, but also a medium for the expansive movements of body and soul” (Martin, Financialization of Daily Life, 3).
societies” and Michel Foucault’s analytical schema of “governmentality studies,” which reaches its zenith with his explication of neoliberalism in the late 1970s.

1. **CONTROL AS A MODE AND PHASE OF GOVERNMENTALITY**

Sociologists and cultural theorists have come to define the present moment—beginning roughly with the influx of information-processing and “real-time” communications technologies within various economic processes in the early 1970s—in terms of post-industrial or information economies, networked societies, and cognitive, communicative, or “third wave” capitalism.² Taking stock of these ideas and contextualizing them with respect to coterminous movements in intellectual history and pioneering insights in the physical sciences, Deleuze names this epoch that of “control.” In his dense, epigrammatic late essay “Postscript on the Societies of Control,” Deleuze charts a series of “new forces” responsible for transforming society in the wake of World War II.³ He identifies a “generalized crisis” in the disciplines of Western modernity and “all the[ir] environments of enclosure—prison, hospital, factory, school, family”—which had been so “brilliantly analyzed” within Foucault’s rubrics of disciplinary power and biopolitics.⁴ Two factors loom large over the “conversion” from disciplinary societies to what Deleuze names the “societies of control”: (1) the rapid development and deployment of digital computing machines and (2) the geopolitical maneuvers, psycho-social manipulations, and monetary and

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³ Deleuze, “Postscript on the Societies of Control,” 3.
⁴ Ibid., 4.
managerial innovations specific to post-Fordist economies. We will pay special attention to how, since the early 1970s especially, these two aspects of control—the telematic and the financial, the cultural and the economic—have become increasingly harmonized. On one hand, the commercialization of the microprocessor revolutionized methods of systems management, data analysis, and bureaucratic organization. With the aggressive rollout of the personal computer by Apple and Microsoft in the early 1980s, the values and norms of technoculture came to thoroughly saturate American life, propagating what Jodi Dean describes as “a new power formation… [seemingly] beyond criticism,” “an ideological formation that uses democracy, creativity access, and interconnection to produce the subjectivities of communicative capitalism.” On the other hand, the Nixon Administration’s abandonment of the gold standard, the collapse of the Bretton Woods regime of international finance, and the subsequent explosion of exchange-rate derivatives trading set the stage for global capital’s full-blown “financialization. This chapter treats the financial revolution and the telematic revolution as twin episodes in the maturation of control, two names for novel operations of power working in concert with the new methods of posthuman knowledge production depicted in Chapter Two.

In the last chapter, we examined the new doctrine of “social physics” that appeared in the juncture of cybernetic ontology and the sort of methodological subjectivism pursued by Hayek. The Manichaean conflicts between the social and natural sciences gave way to a

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5 On this point Deleuze highlights or hints at modular salaries rooted in performance incentives and stock options, leveraged buyouts of corporations by private equity firms, electronic monitoring and telematic logistics, digital money and the explosion of consumer credit, and the “gaseousness” of the post-industrial corporation.
new synthesis rooted in complexity, spontaneity, and a certain blend of automaticity and self-organization. We might consider Deleuze’s “Societies of Control” essay as a sketch of the social metaphysics commensurate with this “posthumanist” regime of knowledge production, which insistently prompts us to keep the development of capitalism at the forefront of the discussion. To Deleuze, the computer actuates a “profound [...] mutation of capitalism” that co-evolves with the “free-floating,” “modular,” trans-disciplinary strategies of social control. “This is no longer a capitalism for production,” he contends, “but [a capitalism] for the product, which is to say, for being sold or marketed. [...] It no longer buys raw materials and no longer sells the finished products: it buys the finished products or assembles parts. What it wants to sell is services and what it wants to buy is stocks.”

Writing in the early 1990s, Deleuze seems to have in mind the explosion of advertising and brand culture, processes of vertical disintegration, and the rise of the service economy, all of which were crucial touchstones in the critique of “late capitalism.” Today, nowhere is the de-emphasis on economic production more obvious than in the advance of financial and digital service sectors. The rise of Google, for example, evinces the paradigmatic twist by which the user-consumers themselves—or rather the data generated and mined from their Web searches and browsing habits—become the very commodity that makes the firm profitable. In this triumphant business model that pairs free services with customized advertising, monetization and commoditization occur retroactively, well after the social diffusion and widespread adoption of the firm’s “products.”

As improved logistical modeling and high-speed telecommunications technologies cultivated new methods of “just-in-time” manufacturing, and as cybernetic machines began

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8 Deleuze, “Postscript on the Societies of Control,” 6.
to out-perform and undercut their human competition in the labor market, the demand for embodied, on-site, all-the-time work went into steep decline, rendering the corporeal training techniques of the industrial age more or less obsolete. In its place, this “higher-order” capitalism (what we have grown accustomed to calling “financial” or, more generally, “immaterial”) requires certain cognitive techniques, which, like the disciplinary ones preceding them, (1) apply on both individual and social levels and (2) extend broadly through a variety of cultural practices and forms. But unlike disciplinary societies, which take root in the physiology of “men,” the biology of populations, and the representational systems of the human sciences, societies of control take root in formal logic, artificial intelligence research, and non-representational information systems. Disciplinary societies produce atomistic subjects who function as parts in a vast thermodynamic machine, while control societies induce subjects who function as information processors perpetually on the lookout for more efficient conjunctions and collaborations.

Recall from the previous chapter that control does not designate any sort of top-down administration of flows. In the cybernetic model, it is rather the opposite—distributed, horizontal, or non-katascopic, as the cyberneticians say. The etymology of control bears this out...

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9 According to Marazzi, who alongside his fellow travelers in the Italian Autonomist movement has aptly diagnosed this situation from a highly critical neo-Marxist perspective, describes how the intensive integration into the market of communication and automation technologies “enhance[s]… profitability outside immediately productive processes” (Marazzi, *Violence of Financial Capitalism*, 31).

10 Crary remains an important if largely understated influence on my understanding and application of Foucault and his sense of the correspondence between capitalism and culture. In *Techniques of the Observer*, he contends that the modern regime of vision that emerged in the early nineteenth-century was not instantiated by representational conventions alone. Pushing against the traditional art historical narrative of modernity, he convincingly details at the heart of modern visual culture “a massive reorganization of knowledge and social practices that modified… the productive, cognitive, and desiring capacities of the human subject” (3). Following Foucault’s general timeline of disciplinary power, Crary demonstrates how the observing subject had become technically, institutionally, and historically constructed according to the needs of industrial capitalism. In other words, specific economic requirements of the machine age—namely, docile bodies and attentive eyes—call for new experiments in visual representation and observatorial techniques. For Crary, corporealization and subjective vision are the cornerstones of the de- and re-territorialization of visual culture in the modern era.
out. The word itself, from the French, entered the English language in the fifteenth century through the world of accounting. It originally meant “to check, verify, and […] regulate payments, receipts, or accounts.” In the trade, this regulation was achieved by comparison with a duplicate register, or *counter-roll*. This counter-roll is significant, as it evinces an exercise that takes place *side-by-side* (not unlike how experimental science today, including the sort of microeconomic research that follows the development of Human Capital Theory, utilizes its “controls”). Only later would the term develop its more common qualities of mastery and domination. But the cybernetic-neoliberal model, I believe, implores us to forget these later notions. Here, we have control absent of either sovereign or institutionalized agency, control realized organically, as it were, simply by virtue of freely communicated information.

I am specifically interested in the ways in which control tactics have advanced through a manifold of *telematically* mediated economic and cultural phenomena—that is, phenomena merging digital telecommunication with information-processing technologies—which have become only more pervasive since Deleuze’s preliminary intervention. Following the bipartite concern for economy and technology expressed in his “Postscript,” as well as in his many collaborations with Felix Guattari, this chapter will articulate the ways in which the *telematicization of everyday life* dovetails with certain socioeconomic designs and financial prerogatives of post-Fordist (or even post-post-Fordist!) capitalism, and with the set of

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12 Wiener and his cohort of cyberneticians importantly demonstrate that, at least from a mathematical perspective, *the more communication there is, the greater the systemic control.* (Wiener, *Cybernetics*).
social management strategies that Foucault, in his 1979 lecture course at the Collège de France, defined as neoliberal governmentality.13

Continuing to work through and around Deleuze’s theory of control, three closely related objectives—at once historical, ontological, and epistemological—underpin the ensuing analysis. In that order, they are:

—First (historical), to lend credence to Deleuze’s somewhat underdetermined periodization of control, which should be viewed less as a strict historical bifurcation than a gradual transition, a rearticulation of technologies, practices, and perceptions that “sometimes even multiply the elements [of prior epochs] and redeploy them within its specific tactic.”14 This problem of historical periodization is a rather contentious matter among Deleuze and Foucault scholars, but in the interest of expediting our inquiry into the present psycho-socio-economic milieu, I will bypass the many fastidious debates over where one regime ends, where another begins, and whether or not such periodizing is, in the first place, methodologically at odds with Deleuze and Foucault’s overarching philosophical projects. My position is that the twin appearance, immediately after the war, of the cybernetic sciences (including information and communications engineering, feedback control theory, neurophysiology, robotics, and artificial intelligence) and American neoliberalism (as in the political philosophy of Friedrich Hayek and the methodological innovations of Milton Friedman and Gary Becker) announces the incipient phase of a landmark reorganization of capital and culture. Of course, the eclipse of “the disciplines” by these purportedly universalizable “meta-sciences” and the onset of a definitively post-modern paradigm of control did not happen overnight. We can think of Bretton Woods as being to the financial sector what the “culture industries” were to the

13 Foucault, The Birth of Biopolitics. These lectures are a primary object of inquiry in Chapter Four.
commercial sector—namely, an assemblage of techniques for indefinitely postponing these debilitating effects of war and continuing to ensure the close coordination of human activities on a mass scale. In the West, the 1960s and early 1970s seemed the apotheosis of the pervasive sense of social, moral, and political collapse. The great reversal came with the microprocessor revolution and the so-called “Nixon Shock,” whereby the American dollar became a purely notional currency, unpegged from the nation’s gold reserves. Hardly a decade after those watershed moments, the desktop computer, on one hand, and the ideology of “free” markets, on the other, had become omnipresent indicators that a radical rethinking of humans and their environments was beginning to take hold.

—Second (ontological), to demonstrate how the very being of individuals and social groups—or, more precisely, the institutional, communicative, and ideational processes by which individuals and social groups have traditionally differentiated themselves from others—are constantly called into question by the “new forces” now unfolding in the cultural confluence of diffuse competition, instant information, and high finance. Deleuze’s “Postscript,” along with his 1986 monograph *Foucault*, describes a speculative-metaphysical flipside to Foucault’s meticulous archival project and so opens up a set of ontological concerns that move beyond discourses and technologies to gauge their integrated effects on the evolution of the organism, the psyche, and the socius. For Deleuze, following Foucault, disciplinary power simultaneously “individualizes and masses together, that is, constitutes those over whom it exercises power into a body and molds the individuality of each member of that body.” In the societies of control, however, “we no longer find ourselves dealing with the individual/mass pair. Individuals have become

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15 In his volume on postwar cinema, *Cinema 2: The Time-Image*, Deleuze refers to this period in terms of a “lost faith in humanity.”
‘dividuals,’ and masses [have become] samples, data, markets, or ‘banks.’" The point is not that the laboring body and the malleable and measurable population no longer exist, just that they are no longer the vanguard figures of capitalist subjectivity. These are rather the “dividual” and the demassified “sample [...] or bank,” figures which I explore in great detail below. Not unlike the earlier ontological fabrications of Western modernity, the dividual and demassified are formed and fortified through a wide range of everyday cultural and commercial activities, as exemplified by microblogging, crowdsourcing, search automation, collaborative filtering, narrowcasting, productivity tracking software, wearable biometric devices, and the panoply of service-provider “apps” for tablet and smartphone devices.

—and third (epistemological), to reframe certain of Deleuze’s theses on control within the rubric of what Foucault and those after him have called “governmentality”—that is, the knowledge-power regime specific to the thought and function of liberal political economy. Conceived as a methodological corrective to the “overvaluation of the problem of the state” in Marxist criticism and in political theory more generally, Foucault’s concept of governmentality emphasizes the ways in which human activities become oriented around markets and organized, not through coercion and compulsion, but through diffuse and complex ensembles of “apparently

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16 Deleuze, “Postscript on the Societies of Control,” 5.
17 Foucault introduces this term in his lecture of February 1, 1978, outlining three distinct senses in which he will use it; I will focus predominantly on the first two that he enumerates. “First,” Foucault says, “by ‘governmentality’ I understand the ensemble formed by institutions, procedures, analyses and reflections, calculations, and tactics that allow the exercise of this very specific, albeit very complex, power that has the population as its target, political economy as its major form of knowledge, and apparatuses of security as its essential technical instrument. Second, by ‘governmentality’ I understand the tendency, the line of force, that for a long time, and throughout the West, has constantly led towards the pre-eminence over all other types of power—sovereignty, discipline, and so on—of the type of power that we can call ‘government’ and which has led to the development of a series of specific governmental apparatuses (appareils) on the one hand, and, on the other to the development of a series of knowledges (savoirs)” (Security, Territory, Population, 108). Insightful explication of Foucault’s governmentality heuristic can be found, e.g., in Burchell, Gordon, and Miller, The Foucault Effect; Barry, Osborne, and Rose, Foucault and Political Reason; Rose and Miller, Governing the Present; Dean, Governmentality; Dean, The Signature of Power; and Lemke, Biopolitics. I take this up again in Chapter Four.
humble and mundane mechanisms.” If, as Foucault consistently claimed, post-sovereign power operates remotely, as action at a distance or an action on another action, then late eighteenth-century political economists were the earliest students, critics, and councillors of its movements and models. For Peter Miller and Nikolas Rose, the concept of governmentality provides an “intrinsic link between a way of representing and knowing a phenomenon [...] and a way of acting upon it so as to transform it.” Governmentality scholars in turn pursue the “programs” and “rationalities” (ways of knowing) as well as the “technologies” (ways of acting) that combine to condition thought, discourse, and behavior in a given historical-geographical milieu. Far exceeding the reach of classical Raison d’État, as well as orthodox Marxism’s theses on the revolutionary state, modern governmental “rationalities,” according to Miller and Rose, comprise “assemblages of philosophical doctrines, notions of social and human realities, theories of power, conceptions of policy, and versions of justice”—all of which inform the “techniques, institutions, and instruments” that mediate and manage the minutiae of social and psychical life.

My aim here, building on the previous chapter’s explication of Hayekian social epistemology, is to demonstrate how key ideas of neoliberal thought become actualized through the new social routines and behaviors made possible by ubiquitous computing and

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19 Nealon neatly gathers a sampling of Foucault’s scattered definitions of power, specifically citing his 1978 dispatch from Iran “The Challenge to the Opposition” and the widely anthologized 1980 lecture “Subjectivity and Truth.” “[T]he power relation in Foucault,” Nealon says, “is not primarily power-on-body, body-on-body,” or even power-on-power, but first and foremost it takes place at the microlevel of ‘force upon force’: power is ‘a set of actions on possible actions.’ And there is no originary, unconstrained, or purely ‘active’ force—as Foucault puts it, ‘there is no action that is unprovoked.’ Force, as the capacity to do work, exists only in fields of relation, in terms of other forces: ‘What defines a relationship of power is that it is a mode of action that does not act directly and immediately on others. Instead, it acts up on their actions’” (Nealon, *Foucault Beyond Foucault*, 103 (emphasis added)).
21 Ibid., 30, 15.
These commonplace routines and behaviors of contemporary digital culture, in turn, model the logic of financial power on the most quotidian scale. In other words, recasting Deleuze’s oblique comments on the historical and ontological parameters of control within a rubric of governmentality allows us to articulate the micro-entrepreneurial ethos and anti-rationalist social epistemology advanced by Chicago School market theorists as the “programmatic” scaffolding for today’s digitally networked cultures and “dividuated” and “demassified” subjectivities. The supplementation of human organisms and human environments via the mobile Internet and World Wide Web, especially in its most recent “2.0” iteration, can be understood as an operation or extension of the new governmental rationality that slowly coalesced in the decades after World War II and eventually eclipsed the assorted social priorities of the old disciplinary regime.

II. FINANCIALIZATION AS SOCIAL REMEDIATION: A POLITICAL ONTOLOGY OF CAPITALISM WITH DERIVATIVES

The social sciences and humanities have, over the last ten or so years, witnessed a wellspring of innovative, inspiring scholarship on the interdependence and co-evolution of telematics technologies and postmodern finance. We have learned, for example, how our most celebrated systems of free and direct, “N-to-N” telecommunication were initially engineered as playgrounds for “liquid” assets, how microprocessors and broadband networks became elemental tools of trade, and how the global financial market was transformed into a universal machine through which anything could be swapped for

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22 In the next chapter, we take this up in light of Foucault’s late career research into “technologies of the self.”
anything with little to no transmission friction (or transactional cost). We have learned how
the “casino” cultures of high finance were legitimated by mathematical erudition and then
domesticated when the home computer brought investment activity into the living room;
and how this new regime of “growth without accumulation” set the stage for the much
broader project of economic informatization. And we have learned how new maladies arise
in psyches and societies uniquely overwhelmed by the alien temporalities produced when an
endless deferral of options contracts and national debts runs up against a cultural obsession
with the omnipresent accessibility of everything and everyone in high definition and real
time.

I propose a slightly different approach to neoliberal finance and financialization, one
that will hopefully bear out the social-metaphysical specifications circumscribed by Deleuze.
I will cast it as a new mediatization, a (methodo)logically coherent set of ubiquitous social
mediating techniques. By locating contemporary financial instruments and practices within a
genealogy of algorithmic governmentality that has roots in the physical, social, and life science
revolutions of the latter half of the twentieth century, we will see financialization in context,
as a pivotal (though neither inevitable nor necessary) step in the maturation of societies of
control. The fractured, dis-individuated subjects of financial rule are bound not by any
spatial enclosures but by the abstract temporal and moral links forged through contractual
obligations of credit and debt. The significance of telematic technologies to the

25 See, e.g., Berardi, The Soul at Work.
26 In The Making of the Indebted Man, Lazzarato frames the geopolitics of finance and debt in a way that is consistent with my own Foucauldian-Deleuzian approach. “Finance,” he argues, “is not an excess of
development of this postmodern finance could hardly be overstated. From the calculator to the automated assembly line, electronic computing and communications machines have been vital to postwar economic production and the development of postmodern finance. Without telecommunications and computer processing, the financial sector could have hardly developed the instruments, pricing models, and trade practices that fast-tracked its hegemony over capital flows in the age of twenty-first-century globalization.

But more important still have been the ontological and epistemological insights of general systems theory and postwar cybernetics (from automata theory to autopoiesis), which, alongside networked digital computing, have been integral to the establishment and maintenance of that spontaneous, self-organizing social system that Hayek calls a catallaxy. While this latest iteration of the marriage between market and machine has been widely documented and discussed, it remains far less clear how the twentieth century’s most persistent and—with respect to public policy and popular opinion alike—most successful philosophy of “freedom” has so managed to embed itself within the telematic media environment of the early twenty-first century. One of the defining features of this catallactic system is the constitutive role of the market in giving order and meaning to “dispersed knowledge” and disparate “information that the authority does not possess.”

For Hayek, as we saw in the previous chapter, the market is not just a site of material and monetary speculation that must be regulated, [not] a simple capitalist function ensuring investment. Nor is it an expression of the greed and rapaciousness of ‘human nature’ which must be rationally mastered. It is, rather, a power relation… Debt… represents the economic and subjective engine of the modern-day economy” (Lazzarato, *The Making of the Indebted Man*, 24–25). Lazzarato makes a strong case that “debt economy” is more politically expedient a name for the contemporary epoch than “financial capitalism” (Ibid. 24). An alternate path for this chapter could have been oriented exclusively around the deployment of instruments of credit and debt in the consolidation of neoliberal governmentality. As it exists, however, this theme will remain for the most part behind the scenes.

exchange but, more specifically, a privileged medium of *immaterial* or *informatic* communication. It links together quantifiable abstractions of reality, which take the form of *prices*, into a coherent, complex, self-maintaining whole—the autopoietic *catallaxy*, which produces nothing but its own conditions for production. One objective of this chapter is to explore the extent to which, as the market comes to be considered in terms of a holistic and unified system, the individuals therein become something else entirely—not autonomous systems but ancillary components, not autopoietic but *allopoietic* machines, at least in the eyes of their increasingly instrumental economist-observers.  

In his lectures on neoliberalism, Foucault makes the case that economics, around the middle of the last century, gradually became a science of competition rather than exchange, its principle object no longer commodity production but “the multiplicity and differentiation of enterprises.” Examining the work of human capital theorists like Becker and Schultz, we will make the case that, for *homo financius* (which we might dub the “post-rational” economic actor, as opposed to the old *homo economicus*), relationships with others through exchange become dominated by a certain *style* of relationship to oneself, an *entrepreneurial style*, competition-ready, so to speak, always looking after one’s various accounts. Before the traditional market relation, there is now, after Becker and alongside computerization, a certain *tele-mediation of oneself* occurring continuously with the help of Web 2.0 platforms,

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28 Maturana and Varela contrast “allopoietic” systems with autopoietic ones. Whereas an autopoietic machine “has its own organization (defining network of relations) as the fundamental variable which it maintains constant,” allopoietic machines “are necessarily subordinated to the production of something different from themselves”; they “have an identity that depends on the observer” and so “do not have individuality” (Maturana and Varela, *Autopoiesis and Cognition*, 79–81). C.f., Hansen’s notion of “heteropoiesis,” used to describe the novel hybridity of human subject and digital environment. As he puts it, building from concepts developed by Gilbert Simondon and Félix Guattari, “Technical objects actualize… that dimension of human evolution that occurs through the exteriorization of the living in tools, language, archives, and institutions, and as such, they convert the *preindividual* excess associated with the living individual into a *transindividual* excess associated with the crucial dimension of the human that is radically exterior to its biological or zoological individuation” (Clarke and Hansen, *Emergence and Embodiment*, 136).

smartphone and tablet “apps,” fitness trackers, and numerous other instruments of self-measure and self-promotion.\textsuperscript{30} This means that, in addition to Foucault’s locating neoliberal rationality in the “diffusion […] of the ‘enterprise’ form within the social body,”\textsuperscript{31} we can add its equal diffusion within the personal and collective psyche—the complete rationalization and exteriorization of what Becker, echoing Hayek, describes as the realm of “pre-conscious” or “endogenous preferences.”\textsuperscript{32} Early controversy surrounding Human Capital Theory is especially telling. When humanistic critics charged that Becker and Schultz’s approach was “demeaning” in its treatment of human subjects as analogous to so many heads of cattle, the economists retorted by pointing out that they had suggested no such analogy, that, in fact, they were attempting to theorize the human—as a laborer, as a consumer, as a \textit{communicator}—as a subset of technology.\textsuperscript{33} In this chapter, we will explicate the “human capitalist,” in short, as the microeconomists’ answer to modern epistemology’s \textit{posthuman} turn.

I hold the telematic screen-scape of Web-based and mobile media to be an archetypal enactor of social demassification and psychical dividuation today, a cultural capstone to an epistemological movement at least half a century in the making. Rebutting the wave of digital utopianism that swept through academic and journalistic discourse alongside the rise of Web cultures in the mid- to late-1990s, media theorist Alexander Galloway has lucidly articulated the rules, or “protocols,” that govern the circulation of information via the

\textsuperscript{30} Techniques of self-measurement and self-promotion often go hand-in-hand, as in the analytical data provided by social media platforms or the encouragement to “share” various aspects of your own metricized persona.

\textsuperscript{31} Foucault, \textit{The Birth of Bio politics}, 242.

\textsuperscript{32} See, e.g., Becker, \textit{Accounting for Tastes}, 22–23.

\textsuperscript{33} Febrero and schwartz, \textit{The Essence of Becker}, 640.
Internet infrastructure. Indirectly, these protocols facilitate certain types of sociality and conduct and mediate particular processes of value-extraction and exploitation which in many ways mirror the new governmental technologies of high finance. One of my basic premises going forward is that the Web, in its current configuration, is far from a lawless virtual frontier or a platform for pure creativity and free expression. Its “protocological” playbook has become a style of population management that has roots not only in the fields of cybernetics and information engineering (a genealogy which Galloway and others well describe), but also in the sort of meta-theory of liberty conceived by Hayek as something engendered by quasi-algorithmic “abstract rules.” As we saw in Chapter Two, liberal political philosophers and economists, since the 1930s and 1940s, had been strategizing ways to build and maintain active, evolving market networks within increasingly complex social environments. Decades ahead of the digital cultural revolution, the fractional, fractal universe of postmodern finance—with its floating fiat dollars, exchange-rate derivatives, and infinitely deferred debts—had already begun to model the systemic complexity and rule by abstraction embodied by the Internet and should thus be seen as a prototype neoliberal socius.

In the U.S. and much of Europe, the political victory of this neoliberal program is typically pegged to the flood of corporate multinationalism and commercial multiculturalism of the Reagan and Clinton years. We might trace its mark further back, to August 15, 1971, when Richard Nixon, in a nationally televised address entitled “The Challenge of Peace,” announced that the U.S. dollar would no longer be directly convertible with gold. By March of 1973, when the influx of U.S. debt began flooding Wall Street in the form of newly

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34 In a passage which, in addition to illustrating how easily capitalism’s axiomatic structure transposes into the digital world, conveys a significant resonance with the neoliberal mantra of toleration, Galloway stresses that “[t]he ultimate goal of the Internet protocols is the totality. The virtues of the Internet are robustness, contingency, interoperability, flexibility, heterogeneity, pantheism. Accept everything, no matter what source, sender, or destination” (Protocol, 42).
minted petrodollars, the global economy was revolving around a monetary system organized with an eye towards structural disequilibrium; currency values (like migrant laborers in a universally competitive global jobs market) were set into total flux.\textsuperscript{35} Nixon’s closing of the “gold window” was backed by neoliberal theorists like Hayek and his Chicago colleague Friedman, who had both long sought money’s outright “denationalization,”\textsuperscript{36} and nudged ahead by crafty profiteers at the Chicago Mercantile Exchange, who were imagining the panoply of new financial instruments that would be needed to mediate and marketize the variable relations among unmoored exchange rates.\textsuperscript{37} Nixon’s maneuver augured the closure of the stability-minded Keynesian designs for global economic growth held over from the days of the Marshall Plan, effectively outsourcing to private firms of the nation-states’ regulatory powers over the supply and value of their currency, over their domestic markets, and, finally, over their citizens.

\textsuperscript{35} Amato and Fantacci offer a compelling narrative of the momentous 1971 event, the creation of the “fiat dollar” and its momentous geopolitical and socioeconomic impacts (Amato and Fantacci, \textit{The End of Finance}, 88–99). On the influx of petrodollars and Wall Street’s advent of new “services” and instruments, see Harvey, \textit{A Brief History of Neoliberalism}, 26–31; and LiPuma and Lee, who damningly conclude that “the recirculation of petrodollars gave postcolonial nations their first introduction to a form of economic violence so abstract and mediated that its structural dynamic remained all but invisible” (LiPuma and Lee, \textit{Financial Derivatives and the Globalization of Risk}, 67–69, (emphases added)).

\textsuperscript{36} For Hayek on “denationalized money” see especially Hayek, \textit{Good Money, Part 2}, 128–229. Bryan and Rafferty recount Hayek’s support for a “commodity-based global money” in opposition to Keynes’ advocacy of nation-state money (Bryan and Rafferty, \textit{Capitalism with Derivatives}, 124–125). They summarize Hayek’s “trivially anti-statist” view as follows: “[T]here need be no connection between state and money. Hayek’s preference was that banks privately issue their own currencies, and that these currencies not be nation-specific. There would be global competition in the provision of money, with profitability the incentive for each issuing bank to sustain confidence in its currency” (Ibid. 151). We will see how, for Bryan and Rafferty, financial derivatives markets can be seen to realize this ideal of denationalized money.

\textsuperscript{37} See Mackenzie’s \textit{An Engine, not a Camera} for a detailed discussion of Friedman’s argument, dating as far back as 1953, for “floating” currencies and flexible exchange rates and against the Bretton Woods system and his paid role as advocate, in 1971, for a futures market in currencies (146–147). As Mackenzie explains, such a market had, prior to Friedman’s successful appeal, been illegal, since the derivative contract in this case would have no underlying asset and so would be the legal (and, in popular opinion, moral) equivalent to gambling. We can date the birth of postmodern finance, accordingly, to May 16, 1972, the day the Chicago Mercantile Exchange launched the first Treasury-approved international money market.
Amid the unprecedented turbulence of global markets and monetary flux, it quickly became clear that investment banks, hedge funds, and the financial arms of corporate enterprises were to be heirs apparent to the capital-intensive industries that had dominated Western societies for more than a century.38 The old Fordist compromise between capital and labor, long the target of neoliberal critique, possessed little truck once the gold window closed and money could be efficiently multiplied without having to first take the form of a commodity.39 Financial markets, it seemed, had decamped from their historically entrenched ancillary position as investors in commodity production. Rather than continue to reinforce the bulwark of postwar planning and stability by reinvesting in industry, they would henceforth evolve in lock step with the maximally competitive, chaotic program of neoliberal social thought.40 Easy credit, alongside the cascade of bank deregulations and trans-national trade partnerships under Reagan and Clinton stand only as further evidence that global capital no longer needed what governments had long been trained to supply—

38 In the words of Lazzarato, “those who were once ‘industrial capitalists,’ the entrepreneurs who risked their own capital, have been reduced to the ‘functionaries’… of financial valorization” (The Making of the Indebted Man, 21). This cuts to the heart of my suggestion above that the “entrepreneurial” subject hypothesized by HCT is actually not autonomous or autopoietic but ancillary to the production of something (value, data, etc.) outside itself.

39 Anthropologists LiPuma and Lee detail how earlier derivatives markets, e.g., for commodity futures, had both material and political constraints imposed on them. “Financial derivatives,” they contend, “have changed all this. Now the underlying asset is no longer coupled to production, but to the medium and means of circulation: money. In the sphere of production, money expresses the deep commensurability, and facilitates the surface exchange, of commodities. In the realm of circulation, money simply expresses and facilitates itself. In what are rightly called the money markets, money mediates itself as capital, currency, interest, and so on. The result is that the underlying asset can now become an abstract relation… In other words, the object of the financial derivatives market is the interconnectivity of forms of money. When the underlier is an abstract relation, centered within circulation, a new world opens up for speculative capital—a world that speculative capital seeks to make in its image. Freed from the constraints imposed by production, the market for financial derivatives faces no immediate limit to its size” (LiPuma and Lee, Financial Derivatives and the Globalization of Risk, 117–118).

40 Bryan and Rafferty identify global competition, particularly with respect to national labor markets, as among the chief impacts of “capitalism with derivatives.” “Financial derivatives, through their roles in commensurating capital across the globe, impose a direct competitive pressure on capital to perform at globally recognized rates of return, or be devalued.” Defining competition simply as “what capital does… the strategic process by which capital pursues profit,” they articulate precisely how “derivative escalate the nature of competition, and hence intensify what capital does” (Bryan and Rafferty, Capitalism with Derivatives, 162–163).
that is, a pliable, highly mobile, nominally democratic (and thus intermittently optimistic) social body. Sovereign states were subsequently delegated the sole objective of establishing and assuring ripe conditions for market competition and, where necessary, providing desirable incentives for individuals to more actively consider and pursue their own self-interest. As the imperatives of material production and growth gradually dissolve, the state’s relationship to its citizenry was redefined according to the sovereign’s basic need to appear credit-worthy; by the mid-1970s, its power had become wholly contingent on its ability to circulate—as currency—its own debts. By the turn of the twenty-first century, few could deny that, as Dick Bryan and Michael Rafferty argue, “capitalism with derivatives,” a more precise term for what I have been referring to as “financialized” capitalism, had sufficiently realized the neoliberal aim of maximally diffuse competition. “[B]y turning institutions and individuals into competing commercial entities,” and by making it “not just businesses that compete… [but] the assets of these businesses… thrown into a constant and relentless process of competition to verify their ‘value,’” nearly every aspect of the social world has become “infused… with a profit agenda.”

Following Bryan and Rafferty, my own contention is that, just as the neoliberal economists’ ideal market model has, in the last three or so decades, crystallized around the intricate instruments of postmodern finance, so too has their ideal social model been most

41 See, e.g., Amato and Fantacci, who explain how “[t]he new monetary regime brought in by Nixon consisted in putting into circulation the central bank’s debts (or the government’s debts issued by the central bank, to put it another way) as if they were money. The exercise of monetary sovereignty now consisted in identifying debt with money” (The End of Finance, 90). In essence, the post-Bretton-Woods system would be one in which “the United States retained the faculty to exercise seignorage on a global scale… Henceforth, the dollars circulating outside the United States would be, at one and the same time, an American debt and an international currency… [T]hanks to seignorage, the United States has continued to reap positive net investment income although its external net credit position had reversed as early as the mid-1980s to a debit position… Basically, for twenty years the United States [has] continued to live as a rentier, earning income on its debts!” (96–97).

42 Bryan and Rafferty, Capitalism with Derivatives, 9.
clearly actualized through certain aspects of contemporary screen culture and the interface ecology of telematic everyday life. The dividual, alongside the demassified “sample, data, market, or bank,” I contend, appear nowhere more clearly than in such new media phenomenon as microblogging, crowdsourcing, search engines, collaborative filtering, and the panoply of service provider “apps” recently introduced for tablet and smartphone devices. The proprietary software algorithms underpinning such platforms and practices constitute a techno-epistemological apparatus that systematically extends the social management strategies of neoliberal governance. Going forward, I will intermittently return to certain technical and historical aspects of financialization, guided by the belief that we can learn a great deal about contemporary processes of subjectivation by triangulating the relationship between governors and governed with an acute understanding of how capitalism—as an autopoietic system—has tended to generate windfall profits over the last four or so decades.

A number of scholars have pointed out how derivatives markets themselves take on a number of governmental functions, as they absorb, abstract, informatize, aggregate, and put into motion—in the form of “underlying assets”—more and more facets of the material world and its flux of relations. Drawing attention to the governmental operations of markets helps us to see through a common misconception surrounding neoliberalism’s

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43 See, e.g., Bryan and Rafferty (Ibid.) on the infusion of competition, discussed above. Elsewhere, the analysis of derivatives in LiPuma and Lee, serves to illustrate how “unregulated flows of capital are engendering a turbulence that is undermining the lives of even peoples who inhabit territories incomparably distant and different from the landscape of metropolitan capital” (LiPuma and Lee, Financial Derivatives and the Globalization of Risk, 5). In short, we see the telematic governmental techniques of derivatives markets at work everywhere the International Monetary Fund lends money to states in exchange for the passage of austerity measures. For Harvey, the explosion of derivatives markets makes for a powerful explanatory device for students of the geography of uneven development (Harvey, The Enigma of Capital). Closer to home, we might turn our attention to the wave of home foreclosures following the collapse of the housing bubble, which ballooned as it did thanks to the advent and popularity of derivatives contracts constructed to “resecuritize” risky loans. On this see, e.g., Y. Smith’s introduction to CDOs and “structured finance” (Smith, Econned, 11–13).
displacement of “capitalism for production” with what we might call “capitalism for circulation” (a corollary to Deleuze’s “capitalism for the product”). The mistaken view holds that the hyper-dynamic financial and social systems that appear now are the result of reduced governmental oversight and action. From Lippmann and Hayek forward, neoliberalism has in fact and in theory never proposed such reduction. Its “freedom from coercion”—perhaps better construed as a right to competition—follows necessarily from clearly stated rules enacted by governmental institutions.\footnote{See my discussion of this in Chapter Two.} Granted, we have in recent decades witnessed a severe dampening of the official regulatory powers of executive agencies (like the Environmental Protection Agency, the Food and Drug Administration, the Securities and Exchange Commission, or the Consumer Financial Protection Bureau) as well as a neutralization of the resistance capacities of its rights-bearing subjects, but this should be taken as but one tack in a vast and programmatic re-regulation of society, wherein the charge of regulation (i.e., “control”) happens at the level of corporate investment, tax incentives, and technologies for creating more complex fields of competition and collaboration.

The trade activities that modern nation-states were erected to broker and the domestic markets they were set up to protect appear to us now as artifacts of another epoch, but again this is not to say that there is less governmental intervention into everyday life; rather, governmentality has metamorphosed to cope with the emergent problems of financial (rather than industrial, productive, or material) hegemony. We see not a loosening or lessening of regulatory control but a profound mutation of its techniques. Neoliberal governmentality thus wields a double-edged sword. Under its aegis, the functions of the state become more abstract but nearly omnipresent, as political institutions evolve from being
market forces in their own right to being arbiters and enforcers of universal competition. The task of “steering” the body politic towards and through markets has largely become privatized and radically diffuse this side of Nixon’s closing of the “gold window,” allowing financial markets to mediate and regulate the policy decisions of states and the macro movements and flows of the global economy. And there is yet another, perhaps more perplexing sense in which we can conceptualize financialization as a new mediality distinct from but co-developed alongside the comprehensive emendation of traditional ideas about labor, class, commonwealth, and the social responsibilities of the nation-state. At a micro and entirely quotidian level, financial logics have come to mediate an individual’s social relationship to her community as well as her psychical relationship to herself. This is to say that not only have exchange-rate and other derivatives made possible the vertical dis-integration and global diffusion of manufacturing characteristic of contemporary capitalism (major firms typically hire (semi-)autonomous subcontractors rather than see a product through the many stages of assembly, marketing, distribution, etc.) by allowing corporations to hedge away the risks of currency fluctuations; they also prefigure a new mode of capitalist subjectivity, one constituted not through the humanist frames of essential rationality or embodied identity but through inter- and intra-personal relations of difference, potentials for connectivity, abstract encounters, and immaterial or informatic expression and transaction.

So my concept of “financial mediality” is meant to encompass two distinct but related phenomena. One concerns the conduct of institutional actors, the other the conduct of individuals. Both will be seen to co-involve computing and communications technologies.

Recall that Wiener’s concept of “cybernetics” derives from the Greek kubernētēs, or “steersman,” “the same Greek word,” he reminds us, “from which we eventually derive our word ‘governor’” (Wiener, The Human Use of Human Beings, 16).
in a variety of ways. At the institutional level financial markets and firms actualize the macro model of governmentality that emerges out of Hayek’s social epistemology, that is, his solution to “the economic problem of society.” Within contemporary computer cultures, the market’s mediatory functions are heightened by increasingly valuable techniques of crowdsourcing and automated recommendation, as well as by surveilling, aggregating, and predicting “services” such as Google. At an individual level homo finannis embodies the micro model of governmentality found in Becker’s theories of human capital and social capital, which, as discussed below, delivers the social sciences to economic methodologies in ways that Hayek never imagined. These mediatory processes are reflected in a number of social networking and micro-blogging platforms (e.g., Facebook, Twitter) as well as in the emergence of the search engine and the service provider “app.”

Situating these vastly influential projects within a Foucauldian-Deleuzian analytical framework, and working with an eye towards problems of governmentality and subjectivization, allows us to grasp the many scales and strata of neoliberalization as an interlocking assemblage of mediators and screens, thoughts and practices, which have come to define our historically unique situation. As our sense of the human as a being bounded by space and time, distance and duration, collapses under the pressures of postmodernity’s exponential acceleration and proliferation of “real time,” the macro- and micro-effects of capital have become increasingly indistinct. Our inquiry into neoliberalism’s underlying logic

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46 This of course is an oversimplified parsing of what is really a more or less seamlessly integrated neoliberal program. In many ways, the outputs of both the Hayek and Becker functions appear opposite of what we might expect. Hayek’s political economy is but a springboard to individual liberty, while Becker’s meticulous quantification of personal preferences and behavioral minutiae ultimately seeks knowledge about aggregate” populations and their parameters of control.

47 C.f., Virilio’s troubled explication of the effects of “computerization” and “extreme science,” which entail “the acceleration not now of history but of reality itself, with the newfound importance of… world time, a time whose instantaneity definitively cancels the reality of distances—the reality of those geographical intervals which only yesterday still organized the politics of nations and their alliances” (Virilio, The Information Bomb, 8).
of control and its subtle saturation of the diverse cultures of computerization, in turn, targets
demassification and dividuation as intensely interwoven phenomena, two fronts of the same
sweeping media–monetary revolution.

Here we might recall the argument from Chapter Two in which Hayek conceives of
competitive and spontaneous—in a word, “free”—market structure in more or less the same
way as Wiener conceives of cybernetic systems. Diffuse and non-coerced information is the
alpha and the omega of such a system—be it individual, market, or machine. In short, more
information means lower entropy (that is, lower rates of systemic decay) and, thus, greater
control. Like that of the cybernetic steersman, the role of government, with respect to the
market, is to ensure the organic generation and maximal circulation of information. Towards
this end, Hayek advocates a “dethronement of politics” and subsequent adoption by the
state of more “automatic mechanisms” and “abstract rules,” which would go into effect
“whenever a type of situation evolves in an individual a disposition toward a certain pattern of
response” (my emphases). These are the parameters of neoliberalism’s revolution in the
discourse of governmental rationality.

Freed from the partisan fights over resource allocation that have permeated the
entire history of capitalist democracy, the state becomes a wholly dispassionate information-processing
machine. Its inputs are aggregate “patterns of response,” largely derived from price data; its
outputs are constructed “situations,” such as competitive environments or incentives for
growth-promoting personal or corporate behaviors.
By the late twentieth century, the bulwark of social solidarity, which had held capital in check for many decades, was severely eroding on multiple fronts.\(^48\) In his 1979 book *The Culture of Narcissism*, anti-liberal social critic Christopher Lasch, whose heretical fusion of Marxian economic analysis and moral conservatism made him anathema to his contemporaries on the Left, presented a culturalist interpretation of this erosion that is worth revisiting. Lasch tracks the dissolution of 1960s communalism and the fetishes for “self-awareness,” “self-help,” and “self-promotion” that followed. In one sense, much of what we now see coming out of the social networks and microblogging platforms of Web 2.0 simply continues this trend of interior valorization at the expense of co-present, collective enunciation. And yet, these computerized, incessantly communicating new mediums bring something more complex to the table. The project of governing becomes increasingly divorced from the state, as Hayek and his Chicago School associates theorize governmentality as a technocratic, algorithmic operation on “dispositions,” and as the techno-scientific supports for such operations become ever more feasible. In other words, the management of social communications and control passes from the public sector into the hands of any entity capable of wielding enough information-processing power to predict and prescribe thoughts, tastes, and behaviors.

One might, as communications historian James Beniger does in his 1986 *Control Revolution*, situate the origin of this diffuse form of governmentality in the development of customer feedback techniques by early twentieth-century market researchers. The widespread use of retail statistics, door-to-door interviews, postcard questionnaires, dry

\(^{48}\) See, e.g., endless political rhetoric aimed at union-busting, or in favor of “free trade” agreements, or drumming up support for wholesale replacement of pension plans with Individual Retirement Accounts and 401(k)s.
waste surveys, and home monitoring devices like A.C. Nielson’s groundbreaking “audimeter,” together with coterminous innovations in advertising, revolutionized industrial cultures by “rationalizing the stimulation and control of consumption.”49 Though Beniger’s influential thesis is hard to dispute, we must pay heed to the social transformations that have taken shape since his writing—specifically, how ubiquitous computing and tele-mediation have radically altered the objects and objectives of feedback and control. As the infinitesimal details of everyday life—not just the commodities we buy, but what we look at, how much attention we have, who we talk to, what we know, where our preferences lie—increasingly funnel into the proprietary algorithms of the new corporate monoliths, the governable elements constituting the social themselves undergo an irreversible ontological mutation.

Though they remain underdeveloped in his work, Deleuze’s notions of *dividuation* and *demassification* will prove invaluable to my circumscription of selfhood, social relations, and governance this side of the telematic turn. Beyond neoliberalism’s multivalent attack on organized labor and the self-centered cultural movements keenly identified in Lasch’s work, the power of demassification appears on full display in the reorientation of both markets and media around tropes of customization and personalization. It is worth noting that Deleuze himself never actually says “demassification”; the term was coined in 1980 by futurologist-turned-business consultant Alvin Toffler, who presented himself as more champion than critic. Though largely ignored by academic researchers, Toffler’s concepts have been widely disseminated in advertising and management discourses. As he sees it, demassification is shorthand for the clutch of social effects of post-standardized, short-run cultural and

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economic production: the dissolution of the nuclear family, radically decentralized and flexible corporate structures, and the rise of the “producer-consumer.”

Ten years after Toffler, Deleuze would identify this new economic formation as “capitalism no longer for production but for the product.” This is a capitalism where advertising and marketing, alongside “services” like finance, insurance, and real estate (the so-called FIRE industries), ultimately dictate the paths of growth and shapes of subjectivity. “Capitalism for the product” means that the primary task of the controllers—whether they be people, machines, or, most likely, some combination of the two—is to employ increasingly refined demographic information to predict how best to market to whom, and when. Each step in this refinement process involves the further analytical disaggregation of the potential consumer into data streams that are themselves, once compared to and recombined with other such streams, primed for commoditization and exchange. Not insignificantly, we see analogous tactics of slicing, folding, and anonymizing at work in the recent derivation of collateralized debt obligations (CDOs) from subprime mortgage bonds, an invention which, according to almost all the narratives, went on to become the infamous primum movens of the late-2000s global financial crisis. The strategy behind the CDO is quite simple, and can be seen operating all throughout the societies of control; the basic aim is to repackage, and so to mask, contingencies (here, the underlying toxic mortgages, born to default) as measurable, competitively priced, distributable and thereby manageable risks (the

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51 Deleuze, “Postscript on the Societies of Control,” 6.
investment grade “tranches” bought by pension funds and foreign banks as if they were as safe as Treasury bills).

In stark contrast to their modern, industrial counterparts, today’s “higher-order” firms extract value less from disciplined bodies than from cognitive processes, communications patterns, memory, and attention. The intense injection of telematic media technologies into everyday activities, especially in Web 2.0, allow these incorporeal resources to be harnessed and exploited with unprecedented efficiency. One salient example of this is the exponential uptick in “productive consumption” in the form of user-generated media content. The cyber-platforms on which our everyday social encounters increasingly take place—platforms like YouTube and Facebook and Twitter—have been justifiably condemned as monopolistic hegemons; the content they present, however, is ultimately of our own making. In her recent *Blog Theory*, political theorist Jodi Dean succinctly, and cynically, summarizes the overarching effects with respect to subjectivity and power:

“Networked, participatory spectacles let us stage and perform our own entrapment.” As Dean has it, the “affective charges we confront and transmit” (a status update, a photo, a song, a tweet) simply “reinforce and extend” the capacities for capture in capitalist systems of valorization and exchange. Even the most banal details of daily experience become the stuff of publicity and self-promotion, “shared” not just among “friends” but, often obliviously, with an entire industry of data collectors and marketing firms as well.

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52 As noted above, Y. Smith provides an excellent introduction to the tactics of such “structured finance.” Bryan and Rafferty define the technical operations of financial derivatives more generally in similar terms. In their words, “Derivatives permit a separation of the asset itself from volatility in that asset’s price” (*Bryan and Rafferty, Capitalism with Derivatives*, 11). Once an underlier, where one even exists, has been sliced up into a modular set of attributes or traits, the “system of derivatives,” as Bryan and Rafferty put it, has two main roles—one of “binding… the present to the future,” and one of “blending… different forms of capital into a single unit of measure” (Ibid., 11–12).

Digital social networks, blogging and microblogging platforms, user-generated media, video-sharing websites, and online comment cultures have all been written about from a critical perspective extensively and, often, well. As communications and cultural transmission practices, these phenomena have become premier objects of study for many humanists and social sciences. Keeping pace with their rapid evolution has become a vital scholarly task. And while much remains to be said on this front, my own critical media theory sets its sights on a slightly different target. I have suggested that the distinctions between economic and social practices become rather blurred within our twenty-first century digital environs, yet the telematically-facilitated practices that I scrutinize in this section—namely, crowdsourcing (along with its subsidiaries “crowdwork” and “crowdfunding”) and automated recommendation—will prove to be especially illustrative of the extraordinary metamorphosis of markets and marketology in the era of neoliberalization. We will see how many of the paradigmatic activities of capitalist cultures have been structurally and semantically transformed, activities that include innovation and knowledge production (crowdsourcing), rote symbolic manipulation (crowdwork), the raising of startup capital (crowdfunding), and, at the other end of the spectrum of elemental economic functions, basic consumer counseling on products, services, and entertainments (automated recommendation). Because such uses of telematic technologies do not necessarily derive from or in any direct way correspond to earlier media modalities (in the way that, say, YouTube is often assessed comparatively with respect film and television, or Facebook with

54 See, e.g., Dean, Blog Theory; Lanier, You Are Not a Gadget; Lovink, Networks Without a Cause; Turkle, Alone Together; Morozov, To Save Everything, Click Here; and van Dijck, The Culture of Connectivity.
respect to telephony, or Twitter with respect to radio and print journalism), our ensuing explication will demand a broadened sense of what we mean when we talk about media as well as a comprehensive theory of the role of telematics in the inception and maintenance of post-disciplinary power. In other words, our foray into crowdsourcing and automated recommendation techniques will ensure that we remain persistently mindful of the ever-increasing extent to which, in the aftermath of telematic “convergence,” our contemporary screen-scape acts as an integral interface between us and the market, between us and other market actors (“user-consumer-producers”), and so too between us and our very selves.

Crowdsourcing, originally conceptualized within business discourse as a technically enhanced and exceedingly lucrative adjunct to the popular practice of outsourcing, epitomizes the social, cultural, and political tendencies of demassification discussed above. In Crowdsourcing: One Step Beyond, Jean-Fabrice Lebraty and Katia Lobre-Lebraty identify the phenomenon as a sort of aftereffect or outgrowth of the financialization of daily life. Following the “transmut[ation] of household savings into financial products” like IRAs and 401(k)s, crowdsourcing platforms incentivize individuals and families to embrace some form or another of exposure to markets in nearly every aspect of their lives. We will come to offer a precise definition of crowdsourcing below, along with a detailed probe of its ontological and epistemological implications. First, however, we will establish a preliminary point of reference by considering the figure and function of the crowd in the history of modern thought.

55 Along these lines, in theorizing “the computer as a mode of mediation,” Galloway paraphrases Deleuze in suggesting that “one should not focus so much on devices or apparatuses as such and more on the physical systems of power they mobilize” (Galloway, The Interface Effect, 18). With this in mind, Galloway performs an important methodological move wherein questions of interface supersede those of media.

56 Lebraty and Lobre-Lebraty, Crowdsourcing, 1.
Since the late seventeenth century, according to the *Oxford English Dictionary*, “the crowd” (or “croude”) has been used more or less interchangeably with “the masses” and “the multitude.”\(^{57}\) With this in mind, we can glimpse perhaps the earliest modern instance of a sustained theory of the crowd in Thomas Hobbes’ *Leviathan*, which presents the foundation of sovereign power as an originary process of coming together of “the Multitude… in one Person.”\(^{58}\) According to Hobbes’ mythopoetic narrative, “erect[ing] … a Common Power” through “Artificial Covenant” means that the individual members of the multitude must “submit their Wills, and Judgements” to the will and judgment of their unitary representative, the “One” who wields a “power able to over-awe them all.”\(^{59}\)

Although the state-form that ultimately emerges from Hobbes’ project may seem rather far afield from modern conceptualizations of crowd psychology and crowd behavior, there are at least two features of his “Multitude so united” that lay important groundwork for later sociological and cultural research—namely, the merger of many individuals into a single corporeality (as illustrated on the book’s famous frontispiece) and the fusion of their diverse ideas and opinions into a unanimous program for action.\(^{60}\) These features of corporeal density and uniform thought play a prominent role, for example, in Charles Mackay’s *Memoirs of Extraordinary Popular Delusions and the Madness Crowds* (1848), a classic journalistic exposition of the multitude’s “herd” mentality. Significantly, observing a variety of historical episodes, Mackay frequently describes the “clamorous… foolish… throng[ing]” crowd as having taken shape at the level of the nation (as in cases involving certain economic bubbles).

\(^{57}\) *Oxford English Dictionary*, s.v. “crowd” (2a, 2b).


\(^{59}\) Ibid., 226, 188.

\(^{60}\) I have treated this facet of Hobbes’ work elsewhere in more detail. See Crano, “Genealogy/Virtuality/War (1651–1976),” 156–178.
and even at the level of the whole of Western Europe (as in the case of the Crusades). To MacKay, the crowd, in almost all events, stands as a precise image of the failure of human reason. By its very nature, the crowd remains perilously susceptible to all sorts of false promises, misconceptions, and hallucinations.

By the end of the nineteenth century, the thronging masses had become so formidable that the anthropologist Gustave Le Bon, in the pioneering book that would come to serve as the principal reference point for subsequent scholarship on crowds, declared that, with the emergence of “entirely new conditions of existence and thought as the result of modern scientific and industrial discoveries” and “the entry of the popular classes into political life,” “[t]he age we are about to enter will in truth be the ERA OF CROWDS.”

Le Bon’s *The Crowd* (1895) brings the Hobbesian multitude full circle. Only after the urbanization and social massification precipitated by industrial capitalism in the nineteenth century could the crowd be reckoned a valid and validating political force in its own right, an achievement which Le Bon takes as a portent of “the last stages of Western civilization,” for, as he sees it, the crowd is “only powerful for destruction.” Characterized by “impulsiveness,” “credulity,” “ingenuousness,” and “intolerance,” it is “little adapted to reasoning [and]… quick to act,” clear evidence that the most “primitive” and “unconscious” impulses of the species remain at work. Like *Leviathan’s* multitude submitting itself to the rule of the sovereign, Le Bon’s crowd “exhibit[s] a docile respect for force,” “overawed” by the authority of its leader; but, whereas the originary political submission, for Hobbes, gives birth to “CIVITAS” and the possibility of justice, the “servility” of Le Bon’s crowd,

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63 Ibid., xix.
64 Ibid., see especially Book One, Chapters I and II.
manifested through its “mental unity” and “instinctive” action, can result only in a return to barbarism.  

As we turn our attention to the novel crowd forms of digital culture, we should underscore a few of the common tropes spanning classical crowd theory. First, the crowd appears; that is, it possesses a spatial, physical, corporeal density in keeping with the word’s earliest English usage, as a verb meaning “to press, push, thrust, shove, etc.” Second, the crowd, while comprising a multitude of heterogeneous individuals, opines and acts as one. And Third, as it demonstrates little capacity for deliberation or hesitation, the crowd conducts itself automatically, responding fervently and immediately to environmental stimuli. In *Crowds and Power* (1960), Elias Canetti (whose German word for crowd, *masse*, hews closely to our manifold concept of “mass” but also can connote processes of mixing and quantification as well as earthen attributes) describes the mind and body of the crowd in more or less these same terms. “[A]ll are equal there,” he writes; “no distinctions count… The man pressed against him is the same as himself. He feels him as he feels himself.”

According to Canetti, four basic traits typify the crowd: equality, density, direction, and an

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65 Ibid., 40. An interesting counterpoint to Le Bon’s theory is his contemporary Tarde’s distinction between crowds and publics. For Tarde, the crowd is “a collection of psychic connections produced essentially by physical contact,” while the public—neatly summarized by Clark as the crowd’s “extension and antithesis”—is “a purely spiritual collectivity, a dispersion of individuals who are physically separated and whose cohesion is entirely mental” (see Clark, *Gabriel Tarde*, 52–53). Crucially, as Tarde understands it, the public emerges only through technological or mediological supplementation, specifically through the nineteenth-century’s mass-circulating newspaper. Contra Le Bon, Tarde sees the crowd as “the most ancient of social groups,” while the public should be understood as the definitive form and force of the era. Tarde’s distinction between public and crowd is useful for our pursuit of the digital crowd, as it allows us to point up the physical nature of the informatic connection. Identifying the digital crowd as a crowd and not a public, then, would reinforce the extended criticism of “publicity” discourse within Web cultures made in Dean, *Publicity’s Secret* and Dean, *Democracy and Other Neoliberal Fantasies.*


urge to grow (this last being rather underappreciated by the earlier theorists).\textsuperscript{68}

Crowdsourcing, as a consummate gesture of demassification, abolishes them all.

In our world of increasingly customized goods, services, and ideas, the masses have functionally disbanded. Historically, the masses originate as a nineteenth-century byproduct of de-skilled factory labor, briddled by the twentieth century’s standardized, industrial entertainments and unidirectional broadcast media.\textsuperscript{69} Today, however, the masses no longer appear as such. The emerging discourse on crowdsourcing, treating it as both business strategy and cultural phenomenon, stands in stark contrast to the classical image of the crowd with which we have been supplied. Once derided and feared by the standard-bearers of classical social philosophy, the crowd—homogenous, agential, and bounded spatially and in the flesh—disappeared from the discourse after WWII, when its members acquired purchasing power and, with the proliferation of branding and the “profusion of lifestyle [choices]” over subsequent decades, the means to distinguish themselves within their own class according to style and taste. By the 1980s and 1990s, their univocal political representation (in the form of unions) had collapsed, their greatest collective accomplishment (the pension) all but entirely liquidated. In the last decade, however, we have seen a stunning resurgence of the crowd, though this one hardly resembles its former self. Articulated anew, this is hardly the “overawed” crowd of Hobbes, the “mad” one of MacKay, or the “barbarian” and “impulsive” one of Le Bon; rather, what we now bear witness to is decidedly “wise”—a new quasi-social formation, an online “community,”

\textsuperscript{68} Ibid., 29.
\textsuperscript{69} Adorno, for example, describes “mass culture” as a function of “social control”; “the masses are not primary, but secondary, they are an object of calculation, an appendage of the machinery” (Adorno, \textit{The Culture Industry}, 99).
engendered and exploited by the set of cultural practices and business tactics we know as *crowdsourcing*.\(^{70}\)

Computer science guidebooks, such as Daniel Schall’s *Service-Oriented Crowdsourcing*, define the practice as “a new model of outsourcing tasks to Internet-based platforms.”\(^{71}\) *Harvard Business Review* likewise depicts crowdsourcing as “an extension of current… outsourcing practices… [which] give[s] companies flexibility and access to a greater variety and depth of skills.”\(^{72}\) Surveying a wide range of literature, public relations consultant and new media scholar Daren Brabham concisely explains that crowdsourcing is an “online, distributed problem-solving and production model that leverages the collective intelligence of online communities to serve specific organizational goals.”\(^{73}\) Taken together, this suite of definitions makes plain the value of telematics in supplying innovative solutions to fairly orthodox economic problems and ratcheting up the regulatory reach of market competition. Crowdsourcing, in other words, may indeed appear “disruptive” and “threatening” to the old guard, as its boosters suggest,\(^{74}\) but for that very reason it also exemplifies what Deleuze and Guattari theorize as capitalism’s “axiomatic” essence—that is, its unbounded adaptability, its creative capacity to “realize… [its] purely functional… relations… in highly varied domains.”\(^{75}\) This is to say that the actuality of the market mechanism can assume an infinite array of unpredictable forms. What we observe in the crowdsourcing phenomenon is evidence of the extent to which telematic media technologies today have been successfully mined by corporate strategists as well as the everyday entrepreneurs constituting our twenty-

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\(^{71}\) Schall, *Service-Oriented Crowdsourcing*, 27.

\(^{72}\) Boudreau and Lakhani, “Using the Crowd as an Innovation Partner,” 68–69.

\(^{73}\) Brabham, *Crowdsourcing*, xix.

\(^{74}\) See, e.g., Lebraty and Lobre-Lebraty, *Crowdsourcing*, 15; and Bingham, “Why Crowdsourcing is the Next Cloud Computing.”

\(^{75}\) Deleuze and Guattari, *A Thousand Plateaus*, 454.
first century’s *petite bourgeoisie*. But while the exploitability of new technology is as old as capitalism itself, the social and ontological and epistemic effects of actual exploitation processes are historically unique.

The “crowd” of crowdsourcing, equally extolled by neoliberal intellectuals (as in the “public choice” theorists in politics and law) and Silicon Valley techno-libertarians, inverts everything we learn from the classical monographs by MacKay, Le Bon, and Canetti. The telematic crowd of the twenty-first century has been pronounced a storehouse of “collective intelligence and a “fertile source of innovation and genius,”76 not the harbinger of civilization’s imminent collapse but the vehicle of its perpetual renewal. While “mental unity” and the overcoming of a certain “burden of distance” were once defining features of crowd formation,77 the “wise” crowd, by contrast, unites neither in thought nor in space nor in action. In fact, its efficacy and its value derive from precisely the opposite characteristics. The “diversity and independence” of its members mean that any given problem the crowd is dealt will be met with “optimally varied” outcomes, or with a “potentially considerable spectrum of returned solution.”78 Beholding this crowd from the vantage point of the business community makes its role as agent and indicator of social and economic reconstruction especially evident. “In contrast [to the traditional corporate organization],” we are told, “a well-functioning crowd is loose and decentralized… [Crowdsourcing]

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76 Brabham, *Crowdsourcing*, 11, xv.
77 Canetti, *Crowds and Power*, 18.
exposes a problem to widely diverse individuals with varied skills, experience, and perspectives.”

Judging by the common rhetorical tropes across crowdwork platforms like Crowdflower and Amazon’s Mechanical Turk (AMT), the brains of millions of online “contributors,” pooled, evaluated, and controlled by these powerful new “requester services,” have become instantly accessible and will always be awaiting the next set of “microtasks” (Crowdflower) or “Human Intelligence Tasks” (AMT). Like a natural resource held in “standing reserve” (Heidegger), the “sourced” crowd is a passive crowd, comprising a set of (ideologically and geographically) irreconcilable positions and rife with latent internal competition. While the discourse stresses the “independence” of crowd members and eagerly highlights their engagement, via crowdsourcing or crowdwork, in technologically facilitated “participatory cultures,” we nonetheless must point out that the crowd itself, as a whole, does nothing. Only the individual members of the crowd can act, though they themselves would be better thought of as individuals, sliced and spliced by the endless and omnipresent automated monitoring and ranking procedures that the requester services deploy in the name of “quality control.” The crowd, for its part, is simply something to be mined, plundered, or picked over.

The term “crowdsourcing” was coined by business journalist Jeff Howe, who paints the phenomenon as the harnessing of a free and open network of informatic exchange composed of teleologically diverse units communicating indirectly, incessantly and in real time. As such, it stands as a definitive realization of the Hayekian catallaxy. Early crowdsourcing projects, in Howe’s estimation, could be understood as so many “exercise[s]
attempting to prove Hayek’s central observation: that we may well already possess the solutions to our greatest dilemmas, and that the project before us is simply to gather [and coordinate] all that knowledge. As both a model of the catallaxy at work as well a mechanism for its actualization, the crowd admits of no central perspective; this crowd is leaderless, and its decisions are multiple and simultaneous and sometimes contradictory. Lebraty and Lobre-Lebraty, taking stock of the growing complexity of economic and social systems in a “turbulent environment” wherein meet high tech and high finance, likewise echo Hayek in arguing that “it is becoming nearly impossible to have a precise image of a situation” and that therefore “classic management methods have reached their limits.” In the wake of digital demassification and psycho-social dissipation, the foremost question for business strategists becomes how to most efficiently manage and mine the crowd.

Contra the classics of crowd study, then, the digitally networked crowd or “community” forms in a social space where, paradoxically, both distance and the possibility of unification have been abolished. It springs up from non-coordinating and heterogeneous “sources”—people whose singular contributions are parsed and parcelled, then algorithmically agglomerated into a neat flow of wisdom, information, “bottom-up” creativity, and market value. In sum, this sourced crowd is only “wise”—that is, it can only be put to work—as long as its individual members maintain a necessary separation. This is a crowd without a mass and a means without end, a crowd that in-forms but does not actually form itself. For MacKay and Le Bon, the crowd formed in the convergence of individuals, flesh, bodies, expressions. Now, we observe a crowd incapable of expressing itself as such, a

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80 Howe, Crowdsourcing, 40. Citing Hayek’s 1945 paper “The Use of Knowledge in Society” (discussed above in Chapter Two), Howe posits crowdsourcing as a potent solution to society’s “failure] to properly appreciate… ‘the knowledge of particular circumstances of time and place,’” an answer to Hayek’s call for an adequate communications system capable of making use of all that “dispersed information” (Ibid. 139).

81 Lebraty and Lobre-Lebraty, Crowdsourcing, 4, 13.
crowd without coherent expression, a means (to increased profits) without (collectively entertained) end. This crowd is only insofar as it is screened out.

For Howe, the tele-mediated, numerically integrated crowd “appears” when a t-shirt company decides to print a new user-submitted and community-elected design each week (Threadless), a stock photo startup aggregates and sells amateur images for a fraction of the cost of the professional archives (iStockphoto), or a Fortune 500 firm publicly posts its most vexing chemistry research problems along with notice of cash reward (Proctor and Gamble). In these representative examples, crowdsourcing, Howe explains, “capitaliz[es] on the deeply social nature of the human species” as it “harness[es] individual people’s ‘spare cycles’ (the time and energy left over after we’ve fulfilled our obligations to employers and family).” This suite of techniques, in other words, makes markets where before there was only sociality, leisure, and spare time, and, wherever there are markets, there will be competition and constraints and new “obligations,” in this case not necessarily to “employers [or] family” but to oneself. For Howe and other enthusiastic commentators eager for the next capitalist revolution, this should rather be understood as a sweeping “democratization” of commerce, of corporate research, and of knowledge production more generally.

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82 Howe, Crowdsourcing, 1–10.
83 Ibid., 13–14.
84 We will pick up this thread in Chapter Four, where we examine neoliberalism in light of Foucault’s important concept of “technologies of the self.”
85 See, e.g., Brabham’s prefatory portrait of crowdsourcing as “a story of cooperation aggregation, teamwork, consensus and creativity… a new arrangement for doing work” (Brabham, Crowdsourcing, 1); Schall’s affirmation of the “open world assumption,” whereby “peers interact and collaborate without being organized on a managerial/hierarchical model” (Schall, Service-Oriented Crowdsourcing, 1); or Bingham’s celebration of crowdsourcing as a “‘consumerization’ [of] innovation” (no page number).
With typically technophilic zeal, Howe highlights “the potential of the Internet to weave the mass of humanity together into a thriving, infinitely powerful organism.”86 The language he uses shows us precisely the extent to which digital media and sociobiological environments have been rendered functionally and ontologically indistinct in the popular discourse. We find objectionable at least three deceptive or evasive assumptions on display here. First, what is actually “woven” has no “mass” at all. “The masses” as traditionally conceived—the Boudreau and Lakhani, “Using the Crowd as an Innovation Partner,” assesses formed in the thick of industrial urbanization, in response to nineteenth-century capital’s want of social cohesion and twentieth-century capital’s want of consumption control—now exist primarily as a continuous stream of data. Secondly, modernity’s traditional concepts of “organism” and “humanity,” along with their various disciplines and institutions, are overcome and transformed by the very practices thought to make them complete. What crowdsourcing actually presents are samples of posthumanity integrated in the circuitry of a “thriving” cyborg—“infinitely powerful,” perhaps, but always strictly self-controlled.87 And thirdly, Howe’s text exemplifies a certain tendency in business, economics, and popular media discourses to promote a highly diluted, insubstantial view of “democracy” and “democratization.”88 Moreover, Howe’s “democratization,” whatever exactly it means, is but one among many rhetorical or discursive solutions to the overarching social problems for cybernetic-neoliberal governmentality—problems of communications, control, and the production and management of uncertainty and risk.

86 Howe, Crowdsourcing, 11.
87 Again, this concept of self-control is thematized in Chapter Four.
88 Interestingly enough, in his 1967 lecture “The Confusion of Language in Political Thought,” Hayek declares the meaning of “democracy” top have been corrupted and suggests replacing it with “demarchy,” which would designate “a limited government in which the opinion but not the particular will of the people is the highest authority” (Hayek, New Studies in Philosophy, Politics, Economics, and the History of Ideas, 96).
Crowdsourcing’s telematic interface between the employer and the labor market matches real-time communications with algorithmic techniques for disaggregating, distributing, and evaluating the performance of tasks. Mirroring the financial sector’s momentous accomplishments under neoliberalism, crowdsourcing distributes and multiplies risks that were once shouldered by established institutions and corporations—the risk of overaccumulation, for example, in the case of commerce, or the risks (and responsibilities) that come with having a permanent workforce, or the risk of funding research that might not generate profitable results. In a business environment where “leaness” and flexibility have become requisites for remaining competitive, crowdsourcing offers a most powerful technique. Crowdwork platforms like Crowdflower and AMT give the concepts of *flexible labor* and *spot markets* entirely new meanings in their efforts, unlimited in scope but infinitesimal in character, to “match buyers and sellers of services.” As explained in *Harvard Business Review*, for firms this means an unprecedented game of “‘bite-sized’ outsourcing… [of] repetitive tasks that require human intelligence but for which it would be difficult and expensive to hire full-time employees.” In short, “labor contracts can function outside the context of long-term employment relationships.” For would-be employees, whose hyper-precarious existence seems to be taken more or less for granted, the crowd represents the apogee of flexibility and choice. Membership, for example through AMT, means the ability to “work from home,” “choose your hours,” “choose your tasks,” and “get paid.”

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89 As Bingham writes on the *Wired* blog, crowdsourcing allows the firm to avoid “massive upfront capital expenditures followed by years of ongoing maintenance and upgrade costs”; by virtue of the third-party remediation of the labor contract (i.e. the platform), “you [the employer] pay for solution, not effort, which predictably sometimes results in failure. In fact, with crowdsourcing, the marketplace bears the cost of failure, not you” (Bingham, “Why Crowdsourcing Is the Next Cloud Computing”).


91 Ibid., 68.
At the heart of crowdsourcing and crowdwork’s “harnessing [of] spare cycles” is a process of ubiquitous entrepreneurialization, which encourages every person, from the T-shirt consumer to the amateur photographer to the lab researcher to the casual completer of “judgments” (as Crowdflower dubs its laborers’ microtasks), to put a price on her every waking moment. Those who constitute today’s crowds epitomize what Foucault identified as neoliberalism’s quintessential subject—the self-entrepreneur, “for himself his own capital… for himself his own producer… for himself the source of his earnings.” We thus must look beyond Hayekian social epistemology if we want to grasp the full import of crowdsourcing as a historical phenomenon of a piece with broader changes in the way capitalist markets have come to be thought and actualized. The final section of this chapter examines the rise and impact of HCT in great detail. For now, we should note that, to the theorist of human capital, an individual’s acts and decisions can, in a “free” society, always be understood in terms of an investment in oneself. Choices regarding leisure, labor, and consumption—in general any choice about how to “spend” one’s time, should all be seen as productive activities, wherein the “product” is an intangible good like happiness or future satisfaction. My contention is that this vision of economic subjectivity, and what Foucault keenly saw as neoliberalism’s “multiplication of the enterprise form,” could hardly be better realized that through the practices of crowdsourcing. As we have seen, these practices and ideas revolve around the twin tendencies of demassification and dividuation, the fragmentation of social solidarity and selfhood alike.

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92 Foucault, The Birth of Biopolitics, 226.
Crowdsourcing is but one face of a polymorphous new model of sociality that has evolved alongside Internet technology and its vast monetization. Automated recommendation systems provide another example of a “community” form so ubiquitous and mundane that it has become entirely invisible. We encounter such automated recommendation systems each time we navigate popular websites like Google, Amazon, Netflix, Facebook, Twitter, or Pandora. As economic transactions and leisure activities take place online in increasing numbers, automated recommendation has, as Harvard Management Update neatly summarizes, come close to discovering “market[ing]’s Holy Grail […] that magic demographic group of one: […] the ability to offer every customer a portfolio of products and services tailored to that individual and no one else.”93 Again, the financial sector has set the precedent for the telematicization of everyday life, with the “customer”—the automated recommenders’ target—pictured as an investor in his/her own and unique and demassified future. Again, we see what was once an exceedingly simple expression of the social bond—here, the act of product or service recommendation—processed by an algorithm into an array of infinitesimal data points with “exceedingly complex” effects. Readers will no doubt be familiar with such systems at work, with their often laughable mistakes and occasional eerie successes. Regardless of the results, their predictions have become all but impossible to avoid. Online retailers, news outlets, and streaming media sites rely on recommender systems to maximize user attention spans; each incessant “next” new thing acts as an assurance mechanism against the risk that users might decamp. Search engines and social networking platforms are arguably even more indebted to their recommender algorithms, since their

93 Bhasker and Srikumar, Recommender Systems in E-Commerce, 8.
profitability is pegged to their advertising revenues, which in turn are pegged to their “unique hits.”

Almost all such recommender systems employ one of the following two methods (or some combination of both). The first is “community”-based (also sometimes referred to as “neighborhood”-based or “user”-based). One popular programming textbook describes how, since community-based systems only process information gathered from a pool of “similar” users, they “do not require any knowledge about the items” being recommended. The processing function of such “community”-based methods is most commonly called “collaborative filtering,” since it designs an “implicit collaboration” between users totally unknown to each other in its efforts to “filter [out] [...] undesired [items].” The “community” or automated recommendation systems, like the “crowd” of crowdsourcing, becomes in essence a screen, a sieve that serves to filter in the most useful preferences or ideas. The second method is content- or item-based. It quantifies, numbers, and analyzes not the commodity as a whole, but instead its various “attributes.” Collaborative filtering is typified by Amazon (“Customers who bought [...] also bought”) and the New York Times (“Recommended for you”), while the item-based method is typified by Pandora, the online radio station that analyzes over four hundred different “musical attributes” and some two thousand “focus traits” before selecting each successive song. Both collaborative filtering and item-based recommendation methods feed on user-generated ratings. These ratings can be either explicit (assigned by the consumer in response to a ratings prompt) or implicit (derived from the consumers past purchases, browsing history, or amount time spent on a given website or page). More generally, recommender systems help facilitate a more total

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95 Ibid., 3.
communication by reconfiguring people and things as aggregates of increasingly refined, programmable points of information. The optimal recommender system, we are told, is one in which “there is no precision loss from the discretization, [as] user preferences [are] captured at an [ever] finer granularity.” As they approach this gold standard, programmers, patent holders, and theorists of the market have begun to conceive of a discretization so “fine” that the analytically discontinuous “grains,” when recombined, will be indistinguishable from an organic, smooth, genuine and ante-augmented reality.

Recalling Deleuze, we should by now be attuned to the ways in which masses and individuals become “redeployed” as databases and users, respectively, within neoliberalism’s tactics for translating abnormalities, aberrations, and uncertainties into measurable and mutually competitive risks. The exemplary practices of automated recommendation, like those of crowdsourcing, illustrate how new techniques of communicative feedback service a flexible and adaptive system of socioeconomic control. From this example, a number of historically unique problems begin to emerge. First, converted to “granular” bits of information propelled by an algorithm through machines and networks, the subject and object (“user” and “item”) become very difficult to differentiate from one another. This is not exactly the romantic “return to the days when suppliers had a personal relationship with their customers” that the marketing gurus have imagined. Instead, we see a wholesale reorientation of the concepts of the “person” and the “personal” around the question of commodity circulation, where the commodities themselves are nothing but the very links and gaps—in this case the “preferences”—that facilitate communicative exchange. Second, at the heart of all

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96 Ibid., 22.
97 See, e.g., my discussion of Bryan and Rafferty above.
98 Bhasker and Srikumar, Recommender Systems in E-Commerce, 8.
recommender systems is a bet that patterns of interests and relationships will remain more or less constant over time.99 As in the case of the pricing algorithms of postmodern, stochastically calibrated finance, the recommendation system posits the past as a static, if swelling, repository of certain and valuable information, while demanding a continuity of conditions from the present into the future. Third, as media theorist Alexander Galloway points out in his study of the “protocological management styles” of network cultures, these methods, while appearing to cater to niche markets and sustain intra-group differences, actually “ensure structural homogeneity.”100 Singular elements or attributes gravitate toward certain hegemonic patterns and tastes,101 replicated ad infinitum through out-put software suggestions, so that, “[w]hile any given user may experience a broadening of his or her personal tastes, the pool at large becomes less and less internally diverse”102 (not unlike the increasingly unstable bundling of subprime mortgages in the run-up to the 2007 housing market collapse). The point, very much in keeping with Friedman’s methodology of “positive economics,” is to generate as much data as possible for the testing out of economic and social scientific hypotheses, hypothesis which “abstract the common and crucial elements from the mass of complex and detailed circumstances.”103

Like crowdsourcing, recommender systems thus epitomize certain subjectivizing and ontological effects of neoliberal governmentality. In sum, they foment (1) a commoditization of consumer behavior, (2) a statistical elimination of historical or temporal contingency, and (3) a proliferation of sameness at an increasingly “granular” level… so that

100 Galloway, Protood, 114.
101 Recall Hayek’s emphasis on “patterns”; and we will see below that HCT is rooted in an assumption of stable or else gradually evolving “tastes.”
102 Galloway, Protood, 114.
103 Friedman, Essays in Positive Economics, 14.
difference/diversity becomes little more than varying (re)combinations of generic and immediately identifiable, pre-sorted information. Treating the logic of automated recommendation as exemplary of computerized, communicative capitalism in the twenty-first century provides a striking counterpoint to the more commonly rehearsed achievements of neoliberalism: its burgeoning culture of choice, its openness towards the future and rejection of rationally coordinated direction, and its superficial celebration of difference and irreducible market multiplicities. That these seemingly contradictory outcomes and ideas can so seamlessly coexist is a testament to the profoundly powerful marriage of freedom and control captured by the neoliberalization of cybernetic thought.

**IV. GARY BECKER AND THE TOTAL EXPLANATION OF HUMAN LIFE**

Foucault’s mapping of modernity find the various social institutions—the school, the hospital, the prison, the state—playing catch-up to industrial capitalism’s violent economic, psychological, and geographic deterritorializations. The epistemologies and methodologies of the social sciences emerged in response to the unique problems generated by this radically destabilizing milieu, culminating in the project Foucault names “biopolitics,” and which governmentality scholars Rose and Miller call “governing from the social point of view.”104 By the late twentieth century, however, the facts of production had become largely dis-integrated from the global economy’s chief profit centers and circuits of finance. The social diffusion of capitalist attitudes and ideas no longer took the homologous sites of training, work, and punishment as its primary routes to embodiment.105 In this section, we will see how Human Capital Theory (HCT), as pioneered by Chicago School economists Gary

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104 Miller and Rose, *Governing the Present*, 17.
Becker and Theodore Schultz, presents a social subject more in keeping with the needs of the post-industrial, postmodern economy and an analytical method capable of quantifying and accounting for the everyday activities of those left behind by technologically enhanced, deskilling, dehumanizing processes of production.

The human-computer communicative acts of crowdsourcing and automated recommendation illustrate how the tendencies of economic, political, and social organization have, in the age of telematics, converged in a vast movement of demassification. At the other pole of subjectification lies what Deleuze calls the “dividual,” not an individual but an existence realized as a modular set of disaggregated fragments, aspects, preferences, and traits all exteriorized and recomposed in the image of an investment portfolio (or else an opportunity for another’s investment). This is the being, the subjectivity, that the novel “economic approach” of HCT has recognized, captured, and interpreted with staggering rates of success.

The first monograph in HCT, Schultz’s *Investment in Human Capital: The Role of Education and Research*, lays out the necessity of a new program for governing from an investment point of view. Extant economic theorizing, he contends, has fallen far short of its explanatory potential, affording alternative fields of research a prime opportunity to pick up the slack and gain sway over the shape of social policy. “The unsatisfactory state of received economic theory in solving the mystery of modern abundance,” says Schultz, “has turned some economists to an array of explanatory factors that are predominantly cultural, social, and political. Although it would be a serious mistake not to consider the roles that some of these factors play in harmonizing an economy, economic theory can contribute much more than it
has to an understanding of the sources of modern abundance.” Human Capital Theory would set out to supply the tools and concepts to revitalize, if not thoroughly reinvent, the function of economics vis-à-vis society. As Schultz argues,

> An investment approach is required in thinking economic growth. In this approach the stock of capital is augmented by investment, and the productive services of the additional capital increase income, which is the essence of economic growth. It is a major step toward a general theory when all investment resources are encompassed and allocated in accordance with the meaningful economic standard established by the relative rates of return to alternative investment opportunities. Thus, in theory, this approach is grounded on an all-inclusive concept of investment and an accounting of all additional investments gives a complete and consistent explanation of the marginal changes... of growth.

Of chief importance to Schultz are, as the subtitle of his book suggests, investments made by individuals in the acquisition of skills and knowledge. But HCT, from the outset, sought to reimagine nearly every realm of everyday life as an opportunity for investment. For example, as Schultz plainly states, “Much of what we call consumption constitutes investment in human capital.” Likewise for a variety of ways in which people make use of their leisure time, or what Howe referred to above as their “spare cycles.” In short, HCT represents a vast expansion of what can be quantified, measured, and counted within the framework of economic analysis; for Becker this includes any decision one makes as to how to allocate her time.

107 Ibid., 4. Schultz gives a more precise elaboration in his 1960 presidential address to the American Economic Association, titled “Investment in Human Capital” and republished in the eponymous monograph: “Although it is obvious that people acquire useful skills and knowledge, it is not obvious that these skills and knowledge are a form of capital, that this capital is in substantial part a product of deliberate investment, that it has grown in Western societies at a much faster rate than conventional (nonhuman) capital, and that its growth may well be the most distinctive feature of the economic system” (Ibid., 24).
108 Ibid., 24
109 Ibid., 25.
110 See especially Becker’s “A Theory of the Allocation of Time,” which opens in typical Becker fashion by pointing out a gaping hole in orthodox economics research. “[T]he allocation and efficiency of nonworking time may now be more important to economic welfare than that of working time; yet the attention paid by
Becker’s early work, culminating in 1957’s *The Economics of Discrimination* and the important articles “An Economic Analysis of Fertility” and “Crime and Punishment: An Economic Approach,” set the stage for this radical overhaul of economic thinking.¹¹¹ His triumphal *Economic Approach to Human Behavior*, from 1976, takes up where Schultz left off in outlining the place of economics with respect to the other social and human sciences.

“[W]hat most distinguishes economics as a discipline from other disciplines… is not its subject matter but its approach,” Becker claims. “The economic approach is uniquely powerful because it can integrate a wide range of human behavior.”¹¹² Insofar as it successfully absorbs “the techniques and findings from other fields,” the economic approach, augmented by HCT, provides “a comprehensive… valuable unified framework for understanding all human behavior… [A]ll human behavior can be viewed as involving participants who maximize their utility from a stable set of preferences and accumulate an optimal amount of information and other inputs in a variety of markets.”¹¹³

It is worth noting that HCT originated in part as an explicit response to Marxist influences in the social sciences. Significantly, rather than refute the claims and frameworks of structuralist anthropologists, social researchers, and cultural theorists, the early proponents of HCT sought to piggyback on certain aspects of their successes while rewriting the terms of the analysis. In *The Economic Approach*, for example, Becker, echoing Hayek’s depiction of the *catallaxy* as a communications system and a socio-mediological phenomenon,

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¹¹³ Ibid., 14.
describes how “[p]rices and other market instruments… perform most, if not all, of the functions assigned to ‘structure’ in sociological theories.”\(^{114}\) He is quick to remind us, however, that what he calls “the economic approach” in no way resembles the deterministic economic view Marx and his followers. “[T]o the Marxist, the economic approach means that the organization of production is decisive in determining social and political structure, and he places much emphasis upon material goods, processes, and ends, conflict between capitalists and workers, and general subjugation of one class by another. What I have called the ‘economic approach’ has little in common with this view. Moreover, the Marxist, like the Benthamite, has concentrated on what ought to be, and has often emptied his approach of much predictive content in the effort to make it consistent with all events.”\(^{115}\) As we will confirm further in the pages that follow, the “economic approach” unique to HCT has, perhaps more convincingly and profitably than any other idea in political economy before or since, dismissed material labor and processes of production from the field’s checklist of primary concerns. The HCT project, as outlined by Becker and Schultz, reconfigures the consumer as a producer (of satisfaction, desire, etc.), the producer as an investor (in herself) and an entrepreneur, the family as a miniature corporation, and the human being in general as a stock of fixed, illiquid capital belonging in the same analytical category as technology.\(^{116}\)

\(^{114}\) Ibid., 5.
\(^{115}\) Ibid., 9.
\(^{116}\) As Schultz puts it, “Much of what we call consumption constitutes investment in human capital” (Schultz, Investment in Human Capital, 24). For Becker and Stigler, a “new theory of consumer choice… transforms the family from a passive maximize of the utility from market purchases into an active maximize also engaged in extensive production and investment activities. In traditional theory, households maximize a utility function of the goods and services bought in the marketplace, whereas in the reformulation they maximize a utility function of objects of choice, called commodities, that they produce with market goods, their own time, their skills, training, and other human capital” (in Febrero and schwartz, The Essence of Becker, 186). Vital here is the recoding of “commodities” in HCT. In a discussion of fashion and fads later in that same article, Becker and Stigler give some examples of what they mean by “commodities” (as opposed to “market goods”), which include “style” and “social distinction.” The actual products people buy in attaining such commodities are, according to Becker and Stigler, “only indirectly… consumed” (Ibid., 201).
Yet, despite these radical reversals and reorientations instituted by HCT (better written, I will argue, as *Posthuman Capital Theory*), Becker nevertheless affirms a tendentious kinship with earlier thinkers whom we would more likely presume him to treat in a more adversarial fashion. “[T]he economic approach,” he concludes, “provides a unified framework for understanding behavior that has long been sought by and eluded Bentham, Comte, Marx, and others.”

We will return to Becker’s profoundly influential “economic approach” to social problems, and to HCT’s monumental challenge to traditional concepts of individuality, selfhood, and sociality; but first I would like to revisit a few of the important earlier achievements of neoliberal thought coming out of the University of Chicago in order to better contextualize the emergence of HCT. In Hayek’s political philosophy we saw a “re-vindication” of liberal principles paired with a significantly revised sense of liberal praxis. Therein, the state was granted a positive function analogous to the governor-regulator’s role in cybernetic diagrams of feedback-control systems. Transposed for neoliberal political philosophy, governmental control wards off the ill effects of direct coercion by recognizing the regulator as an organic part of the larger social and market system’s apparatus of “self-organization.” Unlike the laissez-faire governmentality of nineteenth-century liberalism, which posited state and market as entirely separate spheres, neoliberalism proposes an omnipresent if only indirectly interventionist state, the charge of which is to construct and maintain a reliable price system. For the market to run as it should, it is especially important to the human capitalist “self-entrepreneur,” as well as to those who observe and invest in her, that there be some overarching assurance that prices change continuously to reflect all

matter of social, cultural, political, and environmental differentiation and complexification
and that the difference between a present and future price of some tangible or intangible commodity be something one can freely and fairly count on. In sum, the first major move in
the neoliberalization of governmental thought, owing in large part to Hayek’s insightful appropriations and accommodations of cybernetics and general systems theory, is to
consider neither freedom nor control in isolation but always to appreciate the fact that freedom and control are essentially two names for the same existential or organismic faculty.

Hayek’s concept of abstract rules and his prescription for a bottom-up social policy supply the raison d’être for the project of algorithmic governmentality. Friedman’s positive methodology, which validates economics as an experimental science, furnishes the project with its overarching technique. Adding to these contributions, Becker’s economic approach to non-economic domains of human life—his “view [of] people as stocks resulting from both an initial inherited capital and a sequence of investments over time”118—proffers neoliberal thought with its first fully fledged theory of the subject. It also gives rise to the vast field of “human resources,” wherein the institutionalization of HCT has been most explicit. Schultz makes this evident in his argument that

\[ \text{the failure to treat human resources explicitly as a form of capital, as a produced means of production, as the product of investment, has fostered the retention of the classical notion of labor as a capacity to do manual work requiring little knowledge and skill, a capacity with which, according to this notion, laborers are endowed about equally. This notion of labor was wrong in the classical period, and it is patently wrong now. Counting individuals who can and want to work and treating such a count as a measure of the quantity of an economic factor is no more meaningful than it would be to count the number of all manner of machines to determine their economic importance either as a stock of capital or as a flow of productive services.} \] 119

This treatment of humans as resources, I content, provides an economistic counterpart to cybernetics’ equation of man and machine and a methodological approach commensurate with the changing face of subjectivity in the societies of control.

In HCT we can see how demassification and dividuation form two poles of the same process by which neoliberal thought has transformed both socius and psyche. What Foucault referred to as the “generalization… diffusion… [and] multiplication of the ‘enterprise’ form within the social body” epitomizes the cultural phenomenon of demassification, but is made possible only insofar as each “enterprise-unit” perpetually takes account of its stock and slices itself up into assets and liabilities, honing its investment-grade attributes, liquidating its expendables, and forever biding its time. In terms of governmentality, this “environmentally sensitive,” shape-shifting dividual—especially with the aid of telematic machines and under the guidance of crowdsourcing requests and automated recommendation—becomes a paragon of self-control. The ongoing process of dividuation, in other words, is both automatic and autotelic. The human capitalist, as initially imagined by Becker and Schultz, prefigures what I earlier delineated as homo financius—the new “economic man,” the subject-as-investor, who, via postmodern capitalism’s telematic infrastructure and the digital-cultural superstructure coalescing alongside it, serves as the default model for life in the twenty-first century.

120 Miller and Rose powerfully depict this along the lines of “‘post-social’ strategies for governing conduct,” namely, the imperative understanding that “[t]o remain affiliated one must ‘enterprise’ one’s life through active choice, within authoritative terms and limits that have become integrated within all the practices of everyday life, sustained by a heterogeneous array of ‘civilized’ images and devices for lifestyle promotion” (Miller and Rose, Governing the Present, 98). For Mirowski, the human capitalist or self-entrepreneur “is all at once the business, the raw material, the product, the clientele, and the customer of her own life. She is a jumble of assets to be invested, nurtured, managed, and developed; but equally an offsetting inventory of liabilities to be pruned, outsourced, shorted, hedged against, and minimized… The summum bonum of modern agency is to present oneself as eminently flexible in any and all respects” (Mirowski, Never Let a Serious Crisis Go to Waste, 108).
In other words, within the genealogy of algorithmic governmentality, HCT projects a mode of subjectivity perfectly in sync with our portrait of the posthuman from Chapter Two. Moreover, it vividly illustrates Deleuze’s important but underdeveloped concept of the *dividual*. From an etymological perspective, the key characteristic of the *dividual* is its *divisibility*—its quality of being *divisible by* x. As in the example of user-based automated recommendation, a *dividual* is always cut up and rearranged in different ways—for example, by an insurer, a lender, an advertiser, or a corporation.¹²¹ The common divisor x creates among *dividuals* the potential to be compared, connected, and redistributed across multiple platforms, bringing otherwise indeterminate or incidental behaviors within the realm of cognition and control.¹²²

To the scientific observer, the divisibility (which is also a *di-visibility*¹²³) of the human capitalist, or self-entrepreneur, is an effect of HCT’s unprecedented move to splice all sorts of non-economic and non-rational decisions and activities into the utility function. As Becker explains in *Social Economics*, HCT establishes a technical matrix of “complementarities” that allows it “to incorporate into a utility-maximizing framework” a host of claims that had theretofore been deployed by sociologists and anthropologists as arguments against economic rationality and market-oriented social science methods, claims “that social forces have tyrannical power over individual behavior, that individuals are ‘forced’ to conform to social norms, that culture is dominant.”¹²⁴ The widened purview of the economic approach, as conceived by Becker, is thus central to neoliberalism’s rejoinder to cultural and social

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¹²¹ Elsewhere, I have identified analogous operations at work in the contemporary digital media practice of *sampling* (Crano, “Whatever Rubbish at Hand”).
¹²² This is analogous to the way Bryan and Rafferty define derivatives, above, in terms of their abstracting, blending, and “commensurating” functions.
¹²³ Insofar as the self exists, as described above by Mirowski, simultaneously as subject and object, producer and consumer, observer and observed, and so on.
¹²⁴ Becker and Murphy, *Social Economics*, 9.
scientific criticisms of the postwar capitalism and free-market political policy. Looking back over roughly a half-century of debate, Becker, in his introduction to *Social Economics*, attests to “the great impact of culture, norms, and social structure” on individual behavior; economists, he admits, have failed to account for these influences in any direct way, but at the same time their critics in anthropology and sociology have proven themselves incapable of making inroads “mainly because these other fields have not developed powerful techniques for analyzing social influences on behavior.”125 This, of course, is where HCT steps in to bridge the divide, to reconcile an economistic worldview with sociological, anthropological, and psychological concepts and techniques.

It is in assimilating the problems of other disciplines within the rubric of economic analysis that HCT exhibits its master stroke. What once constituted vital methodological weaponry of capitalism’s lead antagonists—evidence of “the tyranny of social structure,” for example, or what behavioralists Daniel Kahneman and Amos Tversky famously named “cognitive bias”—now come within neoliberalism’s widened embrace.126 Quintessentially irrational and non-self-interested activities, from addictive behaviors to credulousness in the face of advertising, become among the foremost concerns of the human capital theorist.127 At the end of the day, the only thing required for a given decision to count as “economic” and to display “systematic” tendencies is that it “accept reality.” In a 1962 article, “Irrational Behavior and Economic Theory,” Becker concludes that “[e]ven irrational decision units must accept reality… Systematic responses might be expected, therefore, with a wide variety

125 Ibid., 3.
of decision rules, including much irrational behavior. Indeed, the most important substantive result of this paper is that irrational units would often be ‘forced’ by a change in opportunities to respond rationally.” In HCT, the Hayekian “abstract rule” comes full circle. Conceptualized as a placeholder for “tacit knowledge,” a methodological guarantee against epistemic totalization, and thus a check on the coercive power of society’s overseers, it yields in Becker’s microeconomic approach a novel expression of power, a governmental “force” that operates immanently and endogenously with respect to that which it seeks to manage and represent. Foucault had described modern power in fundamentally modern terms, in concert with physicist James Clerk Maxwell’s depiction of electromagnetic attraction, as “action at a distance” and “an action on another action.” What we see coming out of neoliberalism is something else entirely, a new type of “force” that I am attempting to delineate in terms of a cybernetic, posthumanist, postmodern theory of self-control.

At this point it would be prudent to offer the following preliminary definition of neoliberal self-control: self-control means that, when the incentives are right (or the debt burden heavy enough but not entirely unempowering) the governed body will know what to do. Foucault himself, no doubt prompted by a small cadre of French libertarian economists who in the 1970s eagerly announced that “The Gary Becker Revolution” had demanded “a thorough reconsideration of the fundamental problems of society,” was quick to discern the importance of HCT and neoliberalism’s expanded economic approach to governmental

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129 See., e.g., Maxwell, “On Action at a Distance,” in *The Scientific Papers of James Clerk Maxwell*, 311–323.
130 Such incentives could include state-based ones, e.g., adjustments of the Federal Reserve interest rate or changes to the taxation structure (“abstract rules”), as well as those that are privately sponsored, e.g., in the form of advertisements.
thought. In his 1979 lecture course, which I take up in more detail in Chapter Four, Foucault reckons the effects of Becker's project as follows:

Becker, for example—the most radical of the American neoliberals, if you like—says [...] that the object of economic analysis can be extended even beyond rational conduct [...], and that economic laws and economic analysis can perfectly well be applied to non-rational conduct, that is to say, to conduct which does not seek at all, or at any rate, not only to optimize the allocation of scarce resources to a determinate end. Becker says: Basically, economic analysis can perfectly well find its points of anchorage and effectiveness if an individual’s conduct answers to the single clause that the conduct in question reacts to reality in a non-random way. That is to say, any conduct which responds systematically to modifications in the variables of the environment, in other words, any conduct, as Becker says, which “accepts reality,” must be susceptible to economic analysis. [...] Rational conduct [becomes] any conduct which is sensitive to modifications in the variables of the environment and which responds to this in a non-random way, in a systematic way, and economics can therefore be defined as the science of the systematic nature of responses to environmental variables.¹³²

This perspicacious synopsis of Becker’s work cuts to the heart of neoliberalism’s micro-economic methodological appeal. By clarifying the ways in which seemingly irrational conduct might be “formalized [and] incorporated into economic analysis,”¹³³ Becker’s work would not only transform professional economics but the entirety of the human sciences along with it.

The human sciences—sociology, psychology, anthropology, mythology, and literary studies—had long taken root in a basic premise of human irrationality, and so stood steadfastly opposed to traditional economic assumptions about the calculated selfishness of human nature. But Becker’s project, from the 1960s and 1970s on, crafted its methods and metrics with an eye towards the elevation of economics to a hegemonic position with respect

¹³² Foucault, The Birth of Biopolitics, 269.
to those other fields. This is something that classical political economy could have never achieved, since its concept of the rational actor sought only to account for (and thus control for) behaviors that were conducted with an eye towards self-interest and private profitability within the space of the market (as distinct from the territory of the state). Once Becker thoroughly disabused professional economics of its long-held assumptions of narrowly rational, profit-seeking actors, its epistemology and its techniques could become freely applied to all sorts of non-economic problems. Those other disciplines, however, remain of vital use to our understanding the world insofar as they help supply the economists with detailed information about tastes, values, and preferences. The real value of “sociologists, psychologists, sociobiologists, historians, anthropologists, political scientists, lawyers, and others,” according to Becker, hereby lies in their respective capacity to aid in the “predicting and understanding of behavior” by discovering “how preferences have become what they are and their perhaps slow evolution over time.”  

The human sciences, in other words, have become informants, their task, under the aegis of the new economics, being to discover and give discrete, computable form to evermore inputs—psychical, cultural, environmental, etc.—in the neoliberal calculus of control.

Becker’s expansive view of what counts as “rational”—in Foucault’s telling, anything “sensitive to the environment” and thus predictable in the aggregate—allows economics to co-opt the techniques and incorporate the subject areas of various other disciplines without compromising its own epistemological enterprise. Becker’s analyses of human conduct also reveal the centrality of certain historically specific media systems to the propagation and perpetuation of neoliberal markets and ideas, allowing us to place neoliberalism specifically

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134 Ibid., 13.
within the history of control techniques related by Beniger. For example, accepting the 1992 Nobel Prize in Economics, Becker recalled how, in its incessant search for “new sources and types of data, [...] human capital theory stimulated the use of survey data, especially panels.” We should note a deep resonance between Becker’s “survey” and “panel” and Deleuze’s “samples, data, markets, or banks”—so many arbiters of demassification. The tools of human capital theory thus function as *ur-forms* for social control, now that control spurns coercive tactics and instead takes place all around a decision-event, before and after, as prediction and explanation, a soft and flexible incentive rather than an intransigent demand.

The conduct of the human capitalist, or self-entrepreneur, follows patterns made ever more predictable as the epistemic project of self-investment becomes further internalized and as feedback apparatuses, by virtue of telematicization, become at once more ubiquitous and more “fine-grained.” We can reconsider automated recommendation, search-engine logic, and similar algorithmic media operations as so many techniques for the exteriorization of the self. Online, one’s most deeply seated and mechanistic desires, preferences, and tastes are quantified and measured as a series of screen-taps and mouse-clicks. It would seem we are living in the human capital theorists’ dream universe, where the more digital bits of information we consume, regardless of content, the more digital bits of information we produce.

Fredric Jameson, in his landmark 1991 treatise on late capitalist culture, describes the scope of Becker’s approach as “totalizing”, and not without a certain degree of twisted admiration. “We have much in common with the neoliberals,” Jameson muses, “in fact

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135 Febrero and schwartz, *The Essence of Becker*, 651.
virtually everything—save the essentials!" He finds especially impressive the “force and clarity [...] generated by the[ir] rewriting of phenomena like spare time and personality traits in terms of potential raw materials.” As we have seen in the cases of collaborative filtering, crowdsourcing, and so-called social networks, such “raw materials” as spare time and personality traits have become increasingly valuable in and of themselves, and not just for their productive “potential”; as evidenced all across Web 2.0, perhaps most clearly in social networking platforms like Facebook and Twitter, value derives directly from these im-materials’ immediate availability for circulation—that is, for their combinatorial potential (“People you may know,” “People who looked at… also liked…,” and so on). Once aggregated, data-mining and predictive-analytics software, which can in many ways be seen as outgrowths of HCT methodology, renders all our clicks and taps, tastes and desire, as saleable commodities, the purchasers of which (namely, advertisers) take the bet that those tastes and desires will remain relatively stable in the short term, will be slow and unsurprising in their propensities towards change.

Like Foucault, Jameson identifies in neoliberal discourse “a prodigious expansion in what we consider to be rational or meaningful behavior.” This elision—of rational and meaningful—is significant, for what once staked its claim in a universal logic now embraces, in Jameson’s words, any behavior that “any other human being could understand.” The economic object of analysis is thus always relational (always viewed with respect to his or her interpretation of prices and ways of following shared abstract rules). This definition of postmodern, or neoliberal, rationality, is quite compelling, but it does not go far enough.

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137 Ibid., 270.
138 Ibid., 268.
139 Ibid., 270.
Behavior in fact need not be “understood” by another person, only quantified and made available as data, then combined and controlled for. In this case, it is the algorithm and the network that “understands.” Jameson remains perhaps too much a humanist to explicate the full radical import of Becker’s thought. He observes neoliberalism’s staunch repudiation of “the old-fashioned [...] individual,” to be sure, but we ought to elaborate further: From now on, an economic actor can never be considered as one; rather, there must always be comparison, collaboration, and combination, even within oneself. In other words, the “mind” of the dividuated human capitalist—or rather, her “intelligence,” which translates more seamlessly into the distributed silicon-based smarts of telematic networks—analyzes itself by the same principles that guide both its algorithmic and economic analyses.

Becker, of course, was not the first of the Chicago School affiliates to advance such an assiduous assault on orthodox economic rationality, as we saw in Chapter Two with respect to Hayek’s exhaustive rejection of the Cartesian tradition. In the wake of World War II, neoliberal discourse crystalized in opposition to what Hayek articulated as centralized “attempts to impress upon society a deliberately chosen pattern of distribution.” The function of the state, in his formulation, is to discern social patterns in order to adjust the “abstract rules” by which it constructs or conditions competitive environments. These rules, in turn, in the form of incentives (such as taxes on socially undesirable behaviors, or tax-breaks for socially advantageous but not immediately gainful corporate activity), have the power to influence alterations in the patterns. One upshot of this approach to this sort of market-based governmentality, in Hayek’s view, is that it persistently identifies and reinscribes the limits of state power is such a way as to “preserve that indispensable matrix

140 Ibid., 270.
of the uncontrolled and the non-rational.”142 We can describe his rejoinder to what he perennially condemned as “crude rationalism,” as a sort of transcendental or “higher order” rationalism. Under this new post- or counter-rationalist regime, the relationship between government and “pattern” is entirely upended, as it comes to resemble the relationship between the observer and the system, or that between society and the social scientist. Under neoliberalism, social management and economic stewardship demand that the state study and react to patterns rather than simply manufacture and impose them.

But what or whom exactly does the state govern in this scenario? What is the human capitalist or self-entrepreneur? As we have seen, neoliberals, following the standard view of cybernetics, have tended to disregard ontological questions in their methodological emphases on behavior and performance, but I propose that we might make out an ontology specific to HCT through a deeper inquiry into its reconceptualization of human rationality.

Philology affords us an instructive means of differentiating Becker’s critique of rationality from that of Hayek and thereby grasping the truly radical nature of the former. The Oxford English Dictionary tells us that classical Latin rationalis first and foremost signified something “derived from” or “endowed with reason,” as opposed to emotion or intuition. Loosely, we can say that this definition aligns with Hayek’s sense of a rationality that continually traces its limits and learns and grows as it exchanges information with its “environmental” outside. Becker clearly builds on this lineage, but his radicalism encourages us to delve deeper still. Were he more etymologically inclined, he would perhaps point us to the secondary sense of rationalis—“of or belonging to accountants,” which the French adjective rational evoked as early as the fourteenth century. Similarly, a now obscure

142 Ibid., 69.
sixteenth-century Anglophone usage of the noun *rational* to refer to “an accountant or auditor.” The “rational” in this case would be the one who takes stock of inventory, evaluates assets and liabilities, makes recommendations for future action and investment. Economic rationality, in the hands of the Chicago School, thus harkens back to the dawning moments of Western modernity, to an age and a language that, significantly, predate those of Cartesian rationalism.

Yet there exists another usage of *rational* that we must call attention to in making this case. Comparable to the French *rationnel* and the way English-speaking mathematicians use the term, a post-classical Latin usage designates a number or quantity “able to be expressed as a ratio of two whole numbers.” That is, a “rational” is the product of one thing being divided by another. Bearing in mind the combinatorial, collaborative essence of the demassified, dividuated neoliberal socius—an ontology that begins with two, with difference and with relation—we can see Becker’s human capitalist as precisely such an “expression.” Accordingly, and by way of illustration, we can rewrite neoliberal governmentality and its posthuman(ist) subjectivity as a simple mathematical formula:

\[ c = d/v \]

where \((d)\) is what we’ve been calling the infinitely divisible *dividual* (for Becker a set of stable or slowly changing preferences, prospects, and perspectives), \((v)\) is the economic as well as non-economic *variables* or inputs to be experimented with (or the abstract rules and incentives governing the distribution of the databases dividuated elements), and \((c)\) is the *conduct* specific to a given *ratio*, that which algorithmically enhanced risk managers of the telematic media milieu have been tasked to predict. To be clear, the \((d)\) here indicates the subject position of neoliberal thought. To Becker, being rational, “accepting reality,” means
simultaneously following and creating a pattern. Rationality accommodates, in essence, any statistically countable behavior, anything that can be quantified and assigned to a particular “decision unit,” then divided by all known informational inputs upon which a given decision is made.

My proposed formula for neoliberal or postmodern governmental rationality \((c = d/v)\) opens a window onto what Jameson describes as neoliberalism’s founding “metaphysical” precept, the seat of its strength—namely, that “the market is in human nature.” Economic or not, the variables \((v)\) spliced into human subjectivity \((d)\) will always lend themselves to market-oriented interpretation once they can be isolated from the whole of conduct \((c)\). It is significant that we see this not as an ideological coup but a methodological, analytical, and epistemic one. In the twenty odd years since Jameson’s writing, as computer-based dividuation practices become increasingly commonplace, and as HCT proves itself as an all-too-timely subjectivization apparatus in the era of hyper-customization and perpetual network availability, we have become even better positioned to grasp the accuracy of his claim. Indeed, no matter how we want to define “human nature,” the market is unmistakably always already “in” it. As the in-dividual is no longer a primary object of power, the subject, as enterprise, exists for power—as for itself—as an expansive set of ratios, algorithmic inputs, investments, and “accounts.” The algorithmic prediction machines that constitute the governmental infrastructure of the twenty-first century simply do not register in-dividuality—that is, any quality of being self-enclosed, any expression of a singular interiority, any opportunity for a dividual to turn into itself. Becker himself has readily

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143 Jameson, *Postmodernism*, 263.
144 Stiegler, e.g., in his *Technics and Time* series, has theorized a process akin to dividuation in terms of “dis-individualization,” notably an effect of the exteriorization of personal memory on a massive scale. Similarly,
admitted this point, as evidenced in his 1992 Nobel Lecture. For all neoliberalism’s posturing towards private property rights, personal choice, and individual liberty, its “economic approach,” as Becker there divulges, “is not mainly concerned with individuals”; rather, “it uses theory at the microlevel as a powerful tool to derive implications at the group or macrolevel.” His being awarded the Nobel Memorial Prize in Economic Sciences testifies to the degree to which this methodological program has become a _sine qua non_ not only for Chicago-style neoliberalism but for a great deal of professional economics research around the world.

Writing in 1942, renowned economist Joseph Schumpeter defined capitalism, in part, as the “practice [of] turn[ing] the unit of money into a tool of _rational_ cost-profit calculations, of which the towering monument is double-entry bookkeeping.”

Hardly two decades later, Becker set out to incorporate far more such “tools,” or inputs, than money alone. It is easy to see how old-fashioned the neoclassical mindset must have looked, already by the 1960s, when compared to the “unrelenting” radicalism of Chicago School exponents like Becker and Schultz, for whom virtually everything could be included in the cost-profit calculations of the human enterprise. What we get with HCT—a project deeply rooted in the effort to provide “better accounting methods” to people, governments, and firms—is ultimately akin to a double-entry bookkeeping for the soul.

Beyond Hayek’s basic epistemological prescription for the sciences of social or otherwise complex phenomena, and in addition to the new, “positive” conception of the

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Agamben, in _What is an Apparatus?_, describes “desubjectification” as one overarching operation of new media technologies.  
145 Febrero and schwartz, _The Essence of Becker_, 650.  
146 Schumpeter, _Can Capitalism Survive?_, 123.  
147 Febrero and schwartz, _The Essence of Becker_, 641.
state that we saw in Chapter Two, we now have with neoliberalism both a new mode of analysis and a new paradigm of subjectivity. Obviously, this is not all captured by Deleuze’s concepts of “capitalism for the product” and “societies of control.” Nonetheless, Deleuze’s framework offers important insight into the epistemic, mediological, and technical milieus of neoliberalism. The earlier, industrial “capitalism for production” was directed to some extent, from above and in advance. If not by state agents then by the captains of industry or the boards of joint-stock companies. By contrast, capitalism for the product, service-oriented capitalism, the style of capitalism specific to the age of micro-targeted advertising and high finance, finds itself following ever so closely behind its subjects, leaving them, as it were, “free to choose” everything, all the while bettering its predictive analytic techniques and thus its chance of capturing each of those choices in its circuits of information exchange. For the service sector hegemons, the products come pre-constituted, originating somewhere else, somewhere ultimately of little concern. The problem of control is the problem of what to do now that these products and services exist.148

We have said very little about the politics of neoliberalism’s “dethronement of politics,”149 its swift and severe replacement of state rationality with economic modeling, its triumphant plot to redistribute wealth upward under the guise of liberation rhetoric—in short, the rampant immiseration, anxiety, and disenfranchisement that have followed in the wake of its geographical, ideological, and capital reterritorializations. These things have been set aside here, in part because this is relatively familiar ground, in part because, taking inspiration from Foucault, I have remained concerned primarily with the broader conditions

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148 C.f., Beniger’s discussion, referenced above, of control as a strategic response to the problem of over-accumulation.
149 See, e.g., Hayek, Law, Legislation and Liberty, Volume 3, 128.
for subjectivation, for what can be said and what can appear, as well as the everyday micro-
machinations of self-control in postmodern societies.

Our portrait of *homo financius*, or the *posthuman* capitalist, as the arch-subject of
neoliberal control, should be grasped in concert with the late changing tides of market
economies, whose nominal and rhetorical “freedoms” merely serve to obstruct our view of
the consummate operativity of neoliberal control. It is not individual liberty that is at stake,
as the Hayekian and Friedmanite brands of neoliberal social philosophy would have us
believe, nor are individuals themselves conceived as direct targets for control. Rather, what
has been liberated are flows of data, prices, and decisions, and what is controlled (or controlled
for) is now the evolution of the socius writ large. With Deleuze in mind, we have seen how
dividuation and demassification have emerged as the governing tendencies of psychical and
social life. I have argued that this has come about in large part through the convergence of
computational cultures and neoliberal rationality, and through the digital recoding of the
tropes of community, crowd, and neighborhood.\(^{150}\) Like the financial “environment” in
which all earlier economic modes and mindsets are now ensconced, the telematically *screened*
society can be grasped as a vivid actualization of the Hayekian *catallaxy*, a metonym for the
neoliberal market itself, another seductive site of synchronous spontaneity and control.

According to Foucault’s meticulous diagram of modernity, the primary conduits for
power-knowledge, at least up until the middle of the twentieth century, were the individual
and the mass, the anatomic and the demographic, the body of the worker and the body of
the crowd. These, in short, were the two *corporealities* capable of contingent or abnormal, but

\(^{150}\) C.f., Miller and Rose’s contention that an emergent sociological discourse oriented around such terms as
“community” and “neighborhood” has significantly “reduce[d] the salience” of discourse on “the social”
(Miller and Rose, *Governing the Present*, 94).
nonetheless measurable and pliable, behaviors. This entire analytical schema breaks down when we overlay the facts of the recent history of telematic socialization and their place in the neoliberal project. Mimicking the pervasive routine of digital sampling, new market-based media techniques for the generation of data and the recognition of patterns within that data operate by disaggregating and recombining the constituent elements of those old corporealities. The product of these functions is an infinitely modular complex of connections and divisions, sliced and spliced social and psychical experiments in which the identities of people and groups remain forever in flux. The individual (in industry parlance: the “user,” “client” or “customer”) and the community (“neighborhood” or “crowd,” “database” or “bank”) are but momentary unities—united neither in time nor space but only in thought—fleeting in-formed quasi-agents sliced from the ever-changing chaos of streaming data that serves as the starting point for post-modern sociality. Chapter Four brings together the various threads of Foucauldian thought scattered throughout this chapter and the previous one in an effort to unravel the precise nature of neoliberalism’s relationship to modernity, governmentality, and the social history of capitalism. We will focus particularly on Foucault’s late theory of the subject and truth as it emerges in the wake of his research into neoliberal discourse and somewhat attenuated hypotheses on “biopolitics.”

151 Let us not forget Deleuze’s introduction to “the Dividual” (capitalized this time) in *Cinema 1: The Movement-Image* in relation to the “expressed entity” of Ingmar Bergman’s affection-image. According to Deleuze, what Bergman’s films express “is what the Middle Ages called the ‘signifiable complex’ of a proposition, distinct from the state of things. The expressed—that is, the affect—is complex because it is made up of all sorts of singularities that it sometimes connects and into which it sometimes divides. This is why it constantly varies and changes qualitatively according to the connections that it carries out or the divisions that it undergoes. This is the Dividual, that which neither increases nor decreases without changing qualitatively. What produces the unity of the affect at each instant is the virtual conjunction assured by the expression…” (Deleuze, *Cinema 1: The Movement-Image*, 105).

152 I should note that, throughout, I have tried to maintain the standard technical distinction between data, “ontologically raw” *givens* lacking any necessary form, from information, data gathered, formed, and visualized in an always contingent fashion, data made useful or, in the Heideggerian parlance, “ready-to-hand” (See, e.g., Galloway, *The Interface Effect*, 81–82).
CHAPTER 4: FOUCAULT AFTER BECKER: A POSSIBLE GENEALOGY OF THE TELEMATIC SELF

A specter haunts the whole of late Foucault—the specter of neoliberalism. In his 1979 lectures at the Collège de France, *The Birth of Biopolitics*, Foucault presents an incisive reading of postwar political-economic discourse in the United States as well as a startlingly perceptive sense of its looming impact on market societies and their massed populations. This episode brings Foucault’s ongoing critique of biopower and modern governmentality to a sudden close and does little to gesture towards the radical change of course that his research and methodology would thereafter take. In this fourth and final chapter, which will serve as something of a coda to the previous two, I examine Foucault’s encounter with American neoliberalism, and with Human Capital Theory in particular, in light of his subsequent pursuits of the question of subjectivity-qua-truth and the concept of self-care.

My central objective is to demonstrate an affinity between the model neoliberal subject, as an entrepreneur of or investor in oneself, and the subject Foucault finds hiding in Hellenistic and Roman discourses on ethics.1 Whereas the previous chapters attempted to explore neoliberal thought within very broad cultural contexts—the postwar paradigm shift in scientific and social-scientific method (Chapter Two), the newfound hegemony of financial capitalism and the rise of telematic media (Chapter Three)—this chapter remains far

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1 As my aim is to round out our view of neoliberal thought by understanding the meaning it had for Foucault, I will not digress into the specific details of the Greek and Latin sources for his later work; rather, I will refer primarily to his more synoptic interpretative and theoretical claims regarding what he sees as the different foundational models for the Western experience of subjectivity.
narrower in scope, trained on its singular task of further explicating neoliberalism through a speculative theoretical reading of the later Foucault.

1. The Ends of Biopolitics

The closing pages of Foucault’s 1976 *Introduction to The History of Sexuality* presents a compelling conceptual framework for grasping the mechanisms of modern power as well as a promising program for further research. To compliment his prior analyses of corporeal, disciplinary techniques, Foucault gave the name “biopolitics” to the mandate of modern governmental institutions “to administer, optimize, and multiply [life] [by] subjecting it to precise controls and comprehensive regulations. While discipline, or “anatamo-polities,” “individualizes” persons by breaking them down into component parts and reassembling them in the mold of reliable, highly specialized machines, biopolitics sets to work “massifying” populations, taking them in the aggregate as objects of knowledge and acting upon them as such.2 The development of biopolitics—which Foucault articulates as “an indispensable element in the development of capitalism”3—thus encapsulates the problem of growth in modern demography, that of distribution in the statistical sciences, that of epidemiology in medicine, and that of uncertainty and risk in such fields as urban planning, criminology, business, and finance.4

Despite the seeming centrality of the concept, Foucault’s explicit interest in

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2 Foucault, *The History of Sexuality*, 139–140. At times, discussion obliges me to identify explicitly the three volumes of Foucault’s *The History of Sexuality* in terms of their publication sequence, but I will refer to them in the notes by their respective titles, with *The History of Sexuality* referring to Volume One, *The Use of Pleasure* referring to Volume Two, and *The Care of the Self* referring to Volume Three.

3 Foucault, *The History of Sexuality*, 140–141.


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biopolitics, as both governmental strategy and historiographic heuristic, was relatively short-lived. His first usage of the term appears in a two-part lecture delivered in Rio de Janeiro in 1974 titled “The Birth of Social Medicine.” Here, Foucault prefaces his medical genealogy by detailing how, “for capitalist society, it was biopolitics, the biological, the somatic, the corporeal, that mattered more than anything else.” It is no coincidence that he speaks here in the past tense, for the capitalism he is concerned with is that specific to the industrial age, that “which developed from the end of the eighteenth century to the beginning of the nineteenth century” and which coincides with techniques for disciplining bodies and massifying populations. We might think of biopolitics as the form of social control (taken in the rigorous sense developed in the previous chapter: control as a measure of feedback) specific to the first wave of economic industrialization, when, contrary to what many had claimed regarding the increasing ubiquity of individualized doctor-patient relationship, “we did not go from a collective medicine to a private medicine,” but “exactly the opposite.” As societies discovered that contagion is indifferent to class and that disease amounts to economic stagnation, professional medical practice, on Foucault’s account, became a tool of the state and an elemental apparatus in the reproduction of productive bodies. The invention of such things as contagion and disease as social problems was met with the first systematized welfare programs, implemented to “guarantee the health of the needy classes” insofar as was necessary for the health and wealth of “the privileged population.”

5 Foucault, Power, 137.
6 Ibid., 137.
7 Ibid., 136. Foucault specifies, “Modern medicine is a social medicine whose basis is a certain technology of the social body; medicine is a social practice, and only one of its aspects is individualistic and valorizes the relations between the doctor and the patient” (Ibid.). The wave of industrialization began, in the late eighteenth and early nineteenth centuries, “by socializing a first object, the body, as a factor of productive force, of labor power… The body is a biopolitical reality; medicine is a biopolitical strategy” (Ibid., 137)
8 Ibid., 153.
The “Birth of Social Medicine” lecture prefigures Foucault’s succinct yet explosive account of biopolitics in the final chapter of The History of Sexuality, where, in a mere ten pages, he summarizes the gradual redistribution of sovereign power among a variety of new social institutions and fields of knowledge production. Whereas the sovereign’s exercise of power was exemplified in his “right to kill,” this new “biopower,” as it is named here, “exerts a positive influence on life… endeavors to administer, optimize, and multiply it, subjecting it to precise controls and comprehensive regulations.” In later talks and interviews, Foucault thematizes “police” as an early move carried out on behalf of this biopower and its “gradual governmentalization of the state.” In lectures at Stanford in 1979 and the University of Vermont in 1982, for example, Foucault describes police power as the arm of the state that coordinates and safeguards life itself, ensuring its necessities and superfluities alike. In its “embrace [of] everything,” the police materialize at the intersection of pastoralism and raison d’état, or else in the subsumption of the former into the latter. In short, “since the Classical age,” according to Foucault, the sway of the sovereign has been in decline, as the state reinvents itself as a servicer of the national economy by pioneering new modes of power “bent on generating forces, making them grow, ordering them, rather

9 The schema of historical periodization here is more or less identical to that we saw in The Order of Things in Chapter Two.
10 Foucault, The History of Sexuality, 137, 139.
11 Foucault, Security, Territory, Population, 109. For excellent explications of Foucault’s concept of police power, see, e.g., Harcourt, Against Prediction and The Illusion of Free Markets; and essays by Pasquino in Burchell, et al., The Foucault Effect.
12 These lectures, “‘Omnes et Singulatim’: Toward a Critique of Political Reason” and “The Political Technology of Individuals,” are collected in Foucault, Power, 298–325, 403–417.
13 Foucault, Power, 318. The passage continues: “What the police sees to is a live, active, productive man… [T]he role of the police is to supply [men] with a little extra life—and, by so doing, supply the state with a little extra strength. This is done by controlling ‘communication,’ that is, the common activities of individuals (work, production, exchange, accommodation)” (Ibid. 319). The theme of the pastorate, as governmental precursor to the police, is also prominent in Foucault’s Security, Territory, Population course (see especially the lectures from weeks five through seven).
than... impeding them, making them submit, destroying them.”

In *The History of Sexuality*, Foucault portrays biopower as having emerged historically along two axes, or in two harmonized waves: the *anatomo-political*, or disciplinary, and the *bio-political*. The first wave, we recall, molds the body of the individual, renders it docile and productive, fixes it to the synched up rhythms of the factory, the military, the prison, and the movements of their various machines. The second wave, here making its inaugural appearance in writing, is said to consist of “an entire series of interventions and regulatory controls” on a “massive” scale—in short, “a biopolitics of the population.”

While the *anatomo-political* had been hinted at as early as *The Birth of the Clinic* and thoroughly addressed in *Discipline and Punish*, the *bio-political* ultimately receives no such extended treatment, as the second and third volumes of *The History of Sexuality* drastically change course, not only in terms of subject matter (the Ancients rather than the Victorians) but in terms of analytical method as well.

Foucault’s Collège de France lecture courses of 1978 and 1979—*Security, Territory, Population* and *The Birth of Biopolitics*—stand on record as his most thorough and explicit engagement with the problematic of modern governmentality and its contemporary ramifications. He opens the *Security, Territory, Population* course by more sharply delineating

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14 Foucault, *The History of Sexuality*, 136. We should note that, during the mercantilist moment, when political-economic thinking first came to be prioritized as a matter of national affairs, the state’s newfound care for the life of its population remained tightly bound up with the overarching militarist objectives of sovereign power. As Foucault notes, “Mercantilist policy was based essentially on the growth of production and of the active population—the overall object being to establish commercial exchanges that would enable Europe to achieve the greatest possible monetary influence and, thereby, to finance the maintenance of armies and of the whole apparatus that endows a state with real strength in its relations with others” (*Foucault, Power*, 139). As we will see, it is only with the rise of liberal governmentality in the nineteenth century that the rationale behind the economic enablement of the state becomes fully reversed.

15 Foucault, *The History of Sexuality*, 139.

16 In the opening pages of *The Use of Pleasure*, Foucault suggests that it was the target of his investigation—namely, the desiring subject—that initially compelled his “long detour,” his “theoretical shift,” which he decided to undertake despite the significant risk of “upsetting [his] projected... publication schedule” (*Foucault, The Use of Pleasure*, 6–7).
the two axes of post-sovereign bio-power, only trading the term “security” for what he more often refers to as “biopolitics.”17 Where “discipline structures a space and addresses the essential problem of a hierarchical and functional distribution of elements,” says Foucault, “security will try to plan a milieu in terms of events or series of events or possible elements, of series that will have to be regulated within a multivalent and transformable framework.”18 As the prerogatives of industrial capital ultimately underpin the non-sovereign counter-currents of power, Foucault devotes a great deal of attention to “political economy as [the] major form of knowledge” wherever the systematic reproduction of the population is at stake.19 Coterminous with the the “cultural mutation” of knowledge that Foucault had charted a decade earlier in The Order of Things, this suite of governmental powers emerges in contravention of the “deducti[ve]… subtracti[ve] mechanisms” of the sovereign.20 Whereas sovereign power applies itself to the socius intermittently, selectively, and on a case-by-case basis, these newer and more modern powers assume a “highe[r] function”: “to invest life through and through.”21 The ends of biopolitics—as the second, massifying wave of modern governmentality or biopower—thus include the secure reproduction of the social organism, the optimization of collective existence, and, as a historiographic corollary, the establishment of life’s “indispensability” to capitalist growth, which, in Foucault’s words, “would not have been possible without the controlled insertion of bodies into the machinery of production and the adjustment of the phenomena of population to economic processes.”22

17 Note that here he rearticulates biopolitics as “security,” a term which he himself deems “certainly not satisfactory” (Foucault, Security, Territory, Population, 57), but which reappears in The Birth of Biopolitics, where it takes on a more specific sense relating to strategies of risk production and management.
18 Ibid., 20, emphasis added.
19 Ibid., 108.
20 Foucault, The History of Sexuality, 136.
21 Ibid., 137.
22 Ibid., 141.
The mystery at the heart of this chapter has to do with another end of biopolitics—namely, the wholesale disappearance of the concept from Foucault’s work following his “introductory” lectures of 1979. Beginning with his 1980 course, *On the Government of the Living*, and continuing through the remainder of his career, the concerns of the Ancient Greeks, Romans, and early Christians regarding questions of subjectivity and truth, freedom and self-care come to famously displace the distinctively modern “grid” of power and knowledge as Foucault’s privileged reference points for thinking critically about the present. He goes to great lengths, in lectures and interviews as well as in the prefatory remarks in *The Use of Pleasure*, the long-awaited second volume in his *History of Sexuality* project, to explain the logic behind this late methodological—some have even called it a political—metamorphosis. These retrospective reviews typically have his overarching project divided into three chapters, three ways of “doing the history of subjectivity.” These three modes of interrogation treat subjectivity, respectively, as “a field of knowledge,” “an area of political intervention,” and “an ethical position.” Situating his project within the broader tradition of philosophical critique, Foucault emphasizes the role of “technologies” and “techniques,” suggesting that a comprehensive understanding of “the art of governing people in our societies [today]” demands a move beyond studies of “techniques of production” (Marx), “techniques of… communication” (Habermas), and “techniques of domination” (the earlier Foucault) to include “technologies of the self”—that is, “techniques that permit individuals to effect, by their own means, a certain number of operations on their own bodies, their own souls, their own thoughts, their own conduct, and this in a manner so as to transform

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23 This is how he puts it in his 1981 course summary. See Foucault, *Ethics: Subjectivity and Truth*, 88.
There can be no question as to Foucault’s continued concern with theories of
governmentality, however broadly considered, but he remains oddly silent with regard to
biopolitics per se; nor does neoliberalism, as significant as it appears in 1979, ever really
come back into play. Having brought his critical genealogy of modern power to the very
cusp of the contemporary, Foucault suddenly does an about-face; feeling trapped by his own
analytical rubric, and letting his own “obstinate… curiosity” take the lead, he delves deep
into the archives of Antiquity in search of “that which enables one to get free of oneself.”

The Use of Pleasure and The Care of the Self, as Foucault’s final published works, indeed testify to
a certain degree of self-liberation, as the duel exposition of biopolitics and neoliberal
governmentality, his top priority in 1979, becomes obscured beyond recognition in his
subsequent research. When, once, in 1983, Hubert Dreyfus and Paul Rabinow inquire into
the fate of his “genealogy of bio-power” and its potential relevance to his later work,
Foucault replies: “I have no time for that now, but it could be done. In fact, I have to do
it.” This enigmatic response, impatient yet nonetheless eyeing a long arc of promising
research, leaves us eagerly awaiting what could not be.

Where Foucault leaves off, however, others have stepped in to resume research.

After Foucault, the philosophers Giorgio Agamben and Peter Sloterdijk, among others, have

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25 Foucault, “Sexuality and Solitude,” in Ibid., 177. C.f., e.g., Foucault’s response, in “On the Genealogy of
Ethics,” to a question about the relationship between the first and later volumes of The History of Sexuality:
“Three axes are possible for genealogy… the truth axis… the power axis… and the ethical axis.” He also
describes these as “three domains… First, a historical ontology of ourselves in relation to truth through which
we constitute ourselves as subjects of knowledge; second, a historical ontology of ourselves in relation to a field
of power through which we constitute ourselves as subjects acting on others; third, a historical ontology in
relation to ethics through which we constitute ourselves as moral agents” (Ibid., 262–263).

26 Foucault, The Use of Pleasure, 8.

27 Foucault, Ethics, Subjectivity and Truth, 256.
demonstrated the immensely rich possibilities for such a genealogical project.\(^{28}\) In a slightly different vein, Gilles Deleuze, Bernard Stiegler, and a number of theorists associated with the Italian Autonomist movement, have extended Foucault’s analyses of power-knowledge and biopower to cover more recent social, economic, and cultural phenomena, from “affective” labor to biometric technologies to the “precarization” of social and economic existence to the rapid rise of household debt.\(^{29}\) My own research exists somewhere in between these two models, which, at the risk of appearing overly schematic, I will refer to as the *genealogical*, which points backwards from the question of modern biopower, and, for lack of a better term, the *neuropolitical*, which points forward from biopower and coalesces loosely around a critique of “cognitive” or “communicative” capitalism and its post-standardized, “dis-individuated” socioeconomic milieu. It is my hope that the analyses of this chapter will help draw attention to certain missed connections between these two modes of thinking the legacy of biopolitics, and, perhaps more importantly, between the late-modernist and the antiquarian Foucaults. The genealogical legacy, for its part, helpfully acknowledges long-ranging precedents for techniques of power and governmental practices aimed at optimizing the capacities of and extending influence over life in general, but in so doing it tends to lose sight of the historical specificity of biopolitics as a necessary counterpart to capitalist industrialization. The neuropolitical legacy, on the other hand, develops a compelling image of social control in the age of post-Fordist capitalism, rampant financial violence, and the telematic collapse of distance and time, but it imprudently assumes, more often than not, that such phenomena are driven by *the same* governmental rationale laying behind the

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archetypal phenomena of Foucauldian modernity. We have seen already that financialized, cyberneticized economies ascribe little value to massified human life, and that the style of governmentality evolving in concert with capital’s communicative, cognitive, informatic turn is that most thoroughly expressed in the discourse of American neoliberalism; this is to say that we must think beyond the framework of biopolitics if we are to come to terms with the novel subjectivation apparatus of late-capitalist control, but also that, at the same time, we should keep biopolitics in mind as the set of governmentalist positions that neoliberalism is constantly reassigning, dissolving, or applying in some novel way.

To triangulate the two generalized theoretical models of post-Foucauldian biopolitics outlined above, we will set our sights on the long germination period between the first and second volumes of Foucault’s History of Sexuality, and on Foucault’s various explanations of the methodological revelations motivating his project’s profound change of focus. More specifically, I aim to mobilize certain findings from Chapters Two and Three in order to elucidate the significantly under-explained rupture in his thinking. In short, my hypothesis is that Foucault’s encounter with American neoliberal governmentality, and in particular with Becker’s groundbreaking theory of human capital, is what first prompted him to rethink his earlier methodological approach to the historical complex of knowledge, power, and subjectivation. Foucault’s turn, in the wake of his Birth of Biopolitics lectures, to the archives of Greek, Roman, and early Christian Antiquity, I believe, evidences the extent to which his existing analytical rubric for understanding biopolitics, governmentality, and the discourse of political economy had proved incapable of fully accounting for the profundity of the

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30 Notably, Foucault spent several months in Iran in 1978 as a special correspondent for Corriere della Sera and le Nouvel Observateur, publishing dozens of articles, which were met with much controversy, on the revolutionary Islamist movement to overthrow the Western-backed regime. In Foucault and the Iranian Revolution, Afary and Anderson suggest that this experience may have had a role in his late career transition.
neoliberal revolution.

Foucault’s Birth of Biopolitics course brings to a head several years’ research into the formation, rationalization, and maintenance of post-sovereign governmentalities. Continuing from the previous year’s Security, Territory, Population lectures, this 1979 course, taken as a whole, underscores the inestimable importance of political economy, especially its various liberal modes, to the undermining of sovereign power and the shaping of social life and subjectivity since the late-eighteenth century. Already by sixteenth and seventeenth centuries, as Foucault has it, political economy had successfully “lodge[d] itself within… governmental reason.” The rigorous state-critique supplied by liberal theorists, then, meant a check on raison d’état coming from within. “[M]odern governmental reason… establish[es] a principle of limitation that will no longer be extrinsic to the art of government… but intrinsic to it: an internal regulation of governmental rationality.”

Liberal political economy, as the main ideational vehicle for the “governmentalization of the state,” thus limits the application of social policy at the same time as it extends social power into new domains.

*The Birth of Biopolitics*, then, promises to finally flesh out that theme he had so powerfully announced half a decade earlier. His opening lines on January 10, are entirely reassuring: “I will try to show how the central core of all the problems [of modern power] is

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32 Ibid., 14. Shortly after this, Foucault refers to this as a principle of “self-limitation” (Ibid. 20), which we can relate to our previous chapter’s articulation of “self-control.”
33 We need not look far for documentation of the limitations of social policy. Foucauldian social theorists Miller and Rose, for example, define three waves of governmental power: liberalism, biopolitics, and “advanced liberalism” (what we have been calling neoliberalism). In “Death of the Social?” they specify a number of points on which advanced liberalism has outmoded the biopolitical project of “maximiz[ing] social welfare,” a process, they argue, amounting to the “de-socialization of economic government” (Miller and Rose, “The Death of the Social,” 94). On the extension of social power, we will observe below Foucault’s claims regarding the “intensification of social relations” under the sign of self-care. We could also point to important research by social and economic theorists who have made clear the link between neoliberal precarity and new financial and insurantial techniques for the “socialization of risk.”
what is called population… the basis on which something like biopolitics could be formed.” However, “the analysis of biopolitics can only get under way when we have understood the… governmental regime called liberalism” and its “question of… economic truth.” To those pining for the definitive word on biopolitics, Foucault pleads for patience: “Forgive me, for some weeks—I cannot say in advance how many—I will talk about liberalism… [starting with] the physiocrats, d’Argenson, Adam Smith, Bentham, and the English utilitarians [then] jumping ahead to… contemporary German ordoliberalism.” It takes Foucault three weeks to arrive at the mid-twentieth-century Freiburg economists, known as ordoliberals, whose signal theoretical contributions include “an individualization of social policy,” a “multiplication of the ‘enterprise’ form within the social body,” and a rearticulation of “the point of application of… government interventions.” In the ordoliberals, Foucault sees a direct challenge to early- to mid-twentieth-century “welfare policies,” one that would rethink entirely the nature of the relationship between society, economy, and state. Here, it is no longer the task of government to “correct the destructive effects of the market on society,” nor to “form a counterpoint or a screen… between society and economic processes”; rather, “government… has to intervene on society as such, in its fabric and depth… so that the competitive mechanism can play a regulatory role at every moment and every point in society.”

En route to his anticipated discussion of biopolitics, Foucault takes three more

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36 Ibid., 22.
37 Ibid., 144, 148, 145.
38 Ibid., 145. Generally speaking, the practical implementation of ordoliberal thinking in postwar Germany has been considered to be a key factor in the German economy’s *Wirtschaftswunder* following on the heels of wartime devastation. See, e.g., Ptak’s "Neoliberalism in Germany: Revisiting the Ordoliberal Foundations of the Social Market Economy" in Mirowski and Plehwe, *The Road from Mont Pelerin*, 98–138.
weeks to adequately explicate the subtle continuity between ordoliberal social market policies and the laissez-faire principles of the classical liberal political economists. At last, on March 7, Foucault assures his audience that, “in spite of everything, I really did intend to talk about biopolitics.” Yet, rather than make the analytical leap from political-economic discourse to those quintessentially Foucauldian questions concerning power and the practices and technologies through which it circulates, he instead turns to the Chicago School’s uniquely American adaptation of liberal thought, a careful recapitulation and assessment of which closes out his 1979 lectures. “This year’s course,” he writes in the official summary, “ended up being devoted entirely to what should have been only its introduction.”

As it turns out, though, that passing remark on March 7 about Foucault’s forthright intentions—“in spite of everything”—marks the last explicit mention of biopolitics, not only in the course, but for the remainder of his professional career (excepting the aforementioned interview response given to Dreyfus and Rabinow). Subsequent years’ lectures find Foucault to have seemingly abandoned his biopolitical agenda and, along with it, any interest in the implications of neoliberalism for the configuration of modern power. His 1980 and 1981 courses at Collège de France show him fully immersed in the Greek, Roman, and early Christian discourses on the constitution of the subject in a relationship to itself, the discourses and documents that would eventually populate volumes two and three of The History of Sexuality. The problematic of “life” and “the living” remain constant concerns as Foucault shifts from looking at practices of governing others to techniques for governing oneself, but for him the critical cache of “biopolitics” appears to have been depleted just as

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39 Foucault, The Birth of Biopolitics, 185.
40 Ibid., 317.
he was about to announce its “birth.” In other words, by 1980, the hegemony of biopolitics—as a historically specific style of power corresponding to the ends of market growth and the reproduction of increasingly mobile masses—had been eclipsed by some newer, more threatening tactic of social problematization. Neoliberalism, Human Capital Theory, and Control are so many names for this emergent tactic, which we have been following, albeit to different ends, through the previous chapters. That Foucault’s reading of the Chicago School opens his genealogy of modern governmentality to a vastly expanded temporal horizon for will be seen as a corroboration of this hypothesis.

In Chapter Three, we catalogued the sweeping transformation of capitalist economies and cultures after World War Two, accounted for in advance by Friedman’s “positive” economics and Becker’s “totalizing” microeconomic approach. Framed by Deleuze’s theory of control societies, social and economic tendencies towards demassification and dividuation were observed to have accelerated significantly throughout the 1970s, with computerization and automation, on one hand, and the unpegging of the U.S. Dollar from gold, the collapse of the Bretton Woods pact for postwar market stability, and the subsequent explosion of derivatives trading among the capitalist vanguard, on the other. In terms of this chapter’s primary concerns, we can say that what capitalism needs today is far from what modern anatamo- and bio-politics were born to supply. From this side of the telematic-neoliberal turn, we see markets and their governors (both human and algorithmic) cultivating not security but precarity, not massification but fragmentation, not rational plans but abstract rules. The mechanistic, meticulously scripted body at work has been all but vacated from the factory floor. Cognitive and affective labor, regardless of whether or not it is done
under the auspices of employment, form the basis for the contemporary flow of capital (which now takes on social and cultural as much as economic form). The problematization of disease in molecular biology has done to the “clinical gaze” what the problematization of the enemy in drone warfare and counter-insurgency strategies has done to the project of biopolitical warfare. 41 What we witness in all this is the definitive closure of modernity as Foucault had described it from *The Order of Things* to *The History of Sexuality, Volume One*.

Foucault, of course, does not exactly register all these looming effects and artifacts of telematicity and information, but he does see in the work of human capital theorists Becker and Schultz a truly radical style of governmental thinking and a robustly counter- or even ante-modern attitude, which seems to take him genuinely by surprise. The criticisms of the state that prevailed among classic British liberals, Austrian marginalists, and German ordoliberals had already done much to undo the strategies of power long exercised not only by sovereigns and magistrates but so too by the police and the bureaucratic administrators working on behalf of the “governmentalized” state. But while these schools of political economy persistently challenged the guiding principles and time-tested tactics of the all-seeing interventionist state, they ultimately preserved the underlying framework of social analysis. Managing the conduct of others remains the core objective of liberalism, only it says that the market—more specifically, the capitalist price system—should, whenever and wherever possible, be that which does the managing. Liberal and ordoliberal thinkers may indeed have swapped out the old “philosophical-juridical” discourse for one with more

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41 In *The History of Sexuality*, Foucault sketches some of the distinctive attributes of war in the age of biopower. “Wars are no longer waged in the name of a sovereign who must be defended,” he contends; rather, “they are waged on behalf of the existence of everyone; entire populations are mobilized for the purpose of wholesale slaughter in the name of life necessity: massacres have become vital.” He goes on to describe “the atomic situation” as “the end point of this process [of biopolitical warfare]: the power to expose a whole population to death is the underside of the power to guarantee an individual’s continued existence” (*Foucault, The History of Sexuality*, 137).
material and historical concerns, but their misplaced and, in Foucault words, “paranoid… state-phobia” betrays a governmental perspective still trained solely on the efficacy and evolution of techniques for conducting the conduct of others. The style of governmentality Foucault finds in Human Capital Theory (HCT), on the other hand, appears to shift the discourse of political economy into entirely unprecedented territory. As we saw in the last chapter, HCT takes as its object the very subjectivity of the subject cast as uniquely attuned to and attendant upon itself. The relationship between the subject and the governmentalized state apparatus, in turn, becomes analogous to that between a corporate enterprise and the United States Federal Reserve.

In further pursuing Foucault’s motives for overhauling his History of Sexuality project midway through, his unforeseen transposition of what seemed a distinctly late-modern problem set into the registries of Greek and Roman Antiquity, it will be helpful to identify some of the subtle continuities that span the many modes of modern power, from the sovereign to the police to the biopolitical to the ordoliberal. One of the vital starting points for The Birth of Biopolitics is a theory of how the market, in the passage from the Middle Ages to Modernity, evolved from being a “site of jurisdiction” into a “site of veridiction… and a mechanism of the formation of truth.” Foucault highlights this as an “absolutely fundamental phenomenon in the history of Western governmentality.” The basic idea here is that, when freed from certain artificial constraints imposed on it by the state, the market would “spontaneously” generate “natural,” “good,” or “normal” prices, “which will

42 For Foucault’s differentiation between “philosophical-juridical” and “historical-political” discourses, see Foucault, Society Must Be Defended, 57–58, 98–99.
43 Foucault, The Birth of Biopolitics, 188.
44 Ibid., 30–31.
adequately express the relationship, a definite, adequate relationship between the cost of production and the extent of demand.” 46 It is not these prices themselves that are true or false, Foucault explains, but that, in their “naturalness,” they form “a standard of truth which enables us to discern which governmental practices are correct and which are erroneous.” 47 This verification-falsification mechanism marks the paramount achievement of political economy as “the major form of knowledge” behind the state’s governmentalization. From the middle of the eighteenth century on, the rule had become fairly well entrenched: “The market must tell the truth; it must tell the truth in relation to governmental practice.” 48

As late as his March 7 lecture of 1979, Foucault was still reaffirming his criticisms of, and even a sort of impatience with, the “state-phobic” tendencies within liberal governmentality, which in its more laissez-faire moments disproportionately deploys the market’s falsification mechanism, at times seeming to forget entirely its equal capacity to validate the exercise of political will. We see this quite clearly in Foucault’s treatment of Hayek’s otherwise advanced approach to the state-market relationship. To Foucault, Hayek figures as a crucial mediator between the classical, Austrian, and Chicago variations on liberal political economy. At root, Foucault judges Hayek’s mid-century critique of “central planning” and the “arbitrary intervention” of the state to be wholly anachronistic and founded upon a slippery, if not entirely duplicitous, analogy between various state models, something he clearly inherits from earlier liberalisms but redeployes in a deliriously

46 Ibid., 31.
47 Ibid., 32.
48 Ibid., 32; With the rise of laissez-faire liberalism in the nineteenth century, the emphasis on falsifying governmental practices became especially prominent, a tactic unmistakably present in so much right-wing political discourse today.
exaggerated mode.\textsuperscript{49} Hayek’s road-to-serfdom argument ultimately obfuscates the real source of totalitarianism, which Foucault brilliantly identifies to be not state excess so much as its precise opposite, the functional hegemony of the \textit{party} over the state.\textsuperscript{50} Contrary to this prevailing mantra of liberalism, he contends, there in fact exists no “intrinsic tendency [of the state] to expand, [no] endogenous imperialism.”\textsuperscript{51} The dominant political tendencies of the twentieth century—fascism, communism, and a number of varieties of market capitalism—have \textit{all} borne witness, in one way or another, “not so much [to] the growth of the state, but much more its reduction.”\textsuperscript{52} By the postwar decades, in advanced industrial societies, biopoliticized \textit{raison d’état}, while continuing to function, became fully auxiliary to a project of perpetual peace through global commerce.\textsuperscript{53}

All told, the first eight weeks of Foucault’s 1979 lecture course suggest a deeply skeptical, at times even cynical view of liberalism’s “state-phobic” political postures. In the March 14 lecture, however, Foucault swerves suddenly away from that attitude, as he embarks on a thoroughgoing reappraisal of the neoliberal project. In the Chicago School, Foucault exposes a different sort of radicalism. With his reading of Becker and Schultz, the meaning of the \textit{neo}liberal revolution in political economic thinking becomes more clear. It derives not from its anti-state, deregulatory policy prescriptions but from its \textit{methodological} insistence on valorizing the living, breathing, embodied subject’s \textit{point of view}. With HCT, the

\textsuperscript{49} Recall that, for Hayek, the passive acceptance of even the most well-intentioned social welfare programs, for example, in Roosevelt’s New Deal America or in the United Kingdom under the auspices of the Beveridge Plan, meant the first steps along the notorious “road to serfdom,” which ended in Hitler’s Germany and Stalin’s Soviet Union. Foucault takes to task this motif of Hayek’s analysis, charging that it “dilute[s]… the requisite specificity” of governmental critique, “elides… actuality,” and remains unwilling to engage in any sort of self-criticism (Ibid., 188).

\textsuperscript{50} Ibid., 191.

\textsuperscript{51} Ibid., 190–191.

\textsuperscript{52} Ibid., 191.

\textsuperscript{53} Foucault locates the origins of this project in Kant’s 1795 text “On the Guarantee of a Perpetual Peace” (Ibid., 57–58).
“regime of veridiction” that is the market comes to apply not just to the state but, in ever
greater measure, to the subject, the self-entrepreneur, the governor of and investor in oneself.
I will argue that this revolution in economic science, which now claims a nearly universal
epistemic jurisdiction over the whole of the social and posthuman sciences, functions as a
major catalyst for Foucault’s subsequent sudden pivot towards Hellenic and Hellenistic
cultures of the self.

As discussed in Chapter Three, economic actors in the neoliberal “game of enterprises” need not behave rationally in order to stay in the analytical fold. There exist no
normative ideas about how one should conduct oneself, only retrospective accounts of
whatever one decides. The corre
classive governmentality purports to rule without conducting
conduct, without caring how one conducts oneself so long as the price of that conduct, as a bit
of truth, be indexed and observable. The important thing for Foucault is that “[l]iberalism in
America is a whole way of being and thinking, … a type of relation between governors and
governed much more than a technique of governors with regard to the governed.”54 In HCT,
for example, technique rather becomes something one applies to oneself in her capacity as a
self-entrepreneur. This style of governmentality thus has nothing to do with domination or
constraint; however, precisely because of this shifted “relation” with respect to the governed,
it becomes all the more omnipresent, achieving a full-spectrum psychical and social infusion,
all without coercion or arbitrary intervention. Again, the relevant “techniques” here do not
manifest as exogenous manifestations of force; rather, they intramediate the self.55

Having looked well beyond Hayek’s state phobia, we saw in prior chapters how his

54 Ibid., 218.
55 We might productively consider this in correspondence with Luhmann’s neocybernetic and autopoietic claim
(discussed in Chapter Two) that “only communication can communicate.”
methodological individualism and dogged rejection of Cartesian rationality (especially as applied to theories of social or otherwise complex entities) open the door for the more radical extensions of neoliberalism found in Becker and Schultz. But it is these latter two figures who factor most prominently in Foucault’s understanding of neoliberalism’s most profound social and political force. He introduces their pivotal concept of Human Capital on March 14, explaining how it initially emerged as a corrective to classical investment theory’s failure to account for the “mysteries of abundance and growth” in developing nations after WWII. As Schultz describes, economists evaluating only the traditional variables of land, labor, and fixed (i.e. technological) capital were missing a colossal piece of the puzzle. Enter “human capital”—a concept coined to capture, first, all those investments governments and firms make in individuals (primary schooling, on-the-job training, healthcare, unemployment insurance, etc.) and, second, all those investments individuals and households make in themselves (migration, higher education, health and fitness, consumer research, etc.). While the first case illustrates a new type of relation of investment between governors (state agencies, corporations, NGOs, etc.) and the governed, the second case illustrates investment techniques that one applies to oneself in her capacity as both governor and governed. In HCT, the subject is established in an intensive relationship with society’s myriad market regulators, and it is in this regard that it will be seen to conspicuously presage Foucault’s subsequent Hellenistic turn. Having become “Beckerized,” neoliberal governmentality hinges on the seemingly paradoxical wager that increased freedom will amount to increased (self-)control.

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57 This new, directly proportional relationship between freedom and control provides a material link between Deleuze’s theory of control societies and Foucault’s understanding of neoliberal governmentality, which
The most profound effects of HCT, as Foucault sees it in 1979, come from its *subjectivist perspective*, especially as applied at the micro-level to the category of work. “Classical political economy,” Foucault concedes, “has never analyzed labor itself, or rather it has constantly striven to neutralize it… by reducing it exclusively to the factor of time.”58 Against this tradition, which includes Smith and Ricardo as well as Keynes and even Marx, the American neoliberals, Becker and Schultz foremost, sought to treat labor “in its concrete specification and qualitative modulations, …to study work as economic *conduct* practiced, implemented, rationalized, and calculated *by the person who works*” rather than by the person who purchases the commodity of his or her labor.59 In HCT, says Foucault, “we adopt the point of view of the worker and, for the first time, ensure that the worker is not present in the economic analysis as an object… but as an active economic subject.”60 Foucault proceeds to recount how the toolkit developed by Becker and others allows an “economic approach” with tremendous explanatory power to be applied to all sorts of social and behavioral phenomena falling outside of the immediate spheres of production, consumption, and exchange. After HCT, the astute economist, if he or she looks close enough and takes account of a suitable range of “shadow” prices and “marginal” costs, can sufficiently explain any behavior involving the allocation of scarce resources to competing ends. Since *time*, as Becker espies, is the scarce resource par excellence, there remains very little in the way of

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Deleuze does not specifically address. Foucault, for example, explicitly posits neoliberalism’s tactic of control as an inversion of that governing disciplinary societies. Within “this new art of government,” he contends, “control is no longer just the necessary counterweight to freedom, as in the case of panopticism: it becomes its mainspring.” The mechanisms by which the government acts on the socius “introduce additional freedom through additional control and intervention” (Ibid., 67). This depiction of freedom through control confirms my earlier argument regarding the affinity between the neoliberal and cybernetic projects (see in particular Pickering’s commentaries on the work of Stafford Beer, et al.).

58 Foucault, *The Birth of Biopolitics*, 220.
59 Ibid., 223 (emphasis added).
60 Ibid., 223.
activity or even thought that might fall outside the purview of the scrupulous theorist of human capital.\textsuperscript{61}

American neoliberalism thus brings us to the limits of modern thought. The long trajectory of differentiation and specialization in the disciplines, which Foucault had charted in *The Order of Things* and which had informed his research agenda through the mid-1970s, undergoes something of a reversal, as the ever-expanding province of political-economic methodology redistributes prior points of social concern across its own spectrum of problematizations. In short, the set of concepts that constellate in HCT present a monumental challenge to Foucault in 1979. It seems there had been nothing in his archaeologies of knowledge or genealogies of power to prepare him for the Chicagoans' groundbreaking valorization of each laboring subject's singular point of view. Here was a case of specificity that went beyond even the "historical-political" demands of the sixteenth-century Levellers and Diggers (who Foucault discussed in his 1976 lecture course *Society Must Be Defended*) or the nineteenth-century liberals' "restaging" of those demands in their rigorous check on *raison d'état*'s characteristically synoptic claims. The remainder of this chapter will be devoted to testing out the following hypothesis: that Foucault’s encounter with HCT—we might call it his “Becker-Event”—in no small way stoked the methodological metamorphosis that would circumscribe the next and last phase of his career, pushing him to reimagine in some fundamental ways how he might continue to think critically about the Present by meticulously documenting what the Present is not, or rather, what the Present is no more.

\textsuperscript{61} C.f., Becker’s “A Theory of the Allocation of Time,” which “sets out a basic theoretical analysis of choice that includes the cost of time on the same footing as the cost of market goods” (Febrero and schwartz, *The Essence of Becker*, 92).
As noted above, Foucault, in interviews and occasional writings from the early 1980s, described the need he had felt to refine his concept of “experience,” which had remained under-theorized in his studies of madness, disease, criminality, sexuality, and human science. To fully account for the cultural conditioning of the experience one has of oneself, a “third axis” to his “historical ontology” would be required to supplement the necessary-but-no-longer-sufficient axes of knowledge and power. Consequently, Foucault’s concept of governmentality would have to be broadly reconceived to encompass “technologies of the self.” As he “I do not think that reflection on this notion of governmentality can avoid passing through… the elements of a subject defined by the relationship of self to self… The analysis of governmentality must refer to an ethics of the subject.”\textsuperscript{62} The conditions of experience in the post-modern cultures of post-industrial capitalism, in other words, are impossible to grasp through theories of objectification, alienation, or power-knowledge without further supplementation. One cannot approach the worker or the consumer, for example, simply as a passive reservoir of extractable value for others; rather, she must be grasped as an active \textit{enterprise unto herself}. It is thus that Foucault’s established analytical framework, much like the Marxist and structuralist frameworks that he had long found to be relatively ineffectual, appears to stumble precisely where HCT shines—that is, in appreciating and explicating the everyday entrepreneurial experience, in seeking to understand what it means for each individual \textit{to feel like a capitalist all of the time}.

Foucault’s 1982 lectures course, \textit{The Hermeneutics of the Subject}, does important work to
encapsulate and codify the research in-progress since his elusive encounter with the problematic of contemporary governmentality. As such, these lectures might also be read as indirect evidence of the epic impact that neoliberal discourse, and especially HCT, had on Foucault’s thought. By this time, modernity for Foucault appears as an assemblage of adoptions, transformations, and inversions of what he had been finding in the Hellenic and early Christian discourses on self-government and self-care, discourses pertaining especially to pleasure and its regulation, which would come to feature prominently in *The Use of Pleasure* and *The Care of the Self*. Much of his efforts in *The Hermeneutics of the Subject*, however, are devoted to uncovering what had remained “concealed” by the long sweep of Western history, that which emerges “between” the Hellenic and Christian models of subjectivity—namely, a Hellenistic and Roman Imperial discourse on self-care—a family of principles and practices foremost espoused by the Cynics, the Epicureans, and the Stoics—which Foucault delineates from its Hellenic precursor and its Christian successor in a number of ways.63

I propose to demonstrate that this Hellenistic-Roman model, with its rigorous *askesis* and persistent pragmatism, bears a striking resemblance to the self-entrepreneurial ethos of HCT; in the final analysis, we will come to see an uncanny reflection of the latter’s project of *self-investment* in Foucault’s exposition of the former’s project of *self-care*. Consider, for example, the Stoics’ injunction to memorize rules and truths to the point where they become

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63 In the radically condensed explication presented in *The Care of the Self*, this “in-between” discourse, of the Stoics in particular, acquires more continuity with those of Plato and the early Christians. The “severity” of Stoic practices of abstinence and self-reflection are given special attention by Foucault, as they reveal pre-Christian origins of moral attitudes surrounding the restriction of pleasure. On this matter, the significant break for Foucault lies not with the early Christian foundation of strict monastic rule but with the more recent, essentially modern expectation that compunction over the moral conduct of individuals would be met with exogenously imposed corrective measures, and eventually entire disciplines and institutions designed with an eye towards social. We will further review the continuities across the various ancient cultures of self-concern below, but the important thing presently is to unpack the different models as they are much more expansively given in Foucault’s 1982 lectures.
embodied, incorporated into one’s very being, so that one conducts oneself through personal trials “as if spontaneously,” much like one responds in the neoliberal marketplace to changes in price, not by consciously processing “all the relevant information” but by automatically processing environmental changes according to “abstract rules.” Consider as well the Stoics’ innovative sense of conversion, wherein the self folds into itself with little concern for the possibility of parlaying self-control into either control over others, as in the Platonic version, or self-renunciation, as in the Christian take. Consider the descriptions of hypomnemata—account books, registers, or individual notebooks—in which one would draw up each day’s balance sheet, comparing what one had anticipated or intended with what actually unfurled—media of self-exteriorization geared towards what we earlier took to be a proto-double-entry bookkeeping of the soul. Consider, finally, the importance, in that short-lived paradigm of Hellenistic self-care, of preparedness for death, the headlong rush into the mentality of old age, the dictate that one care for oneself over the course of one’s entire life and that, in so doing, one live life as if it’s already over.

We will take each of these considerations up in more detail in the pages below, as we attempt to pinpoint a precedent for the radically non-modern governmental rationale that Foucault encounters in 1979. Like the Human Capitalists that we have all become, the Greeks and Romans to whom Foucault turns appear to endlessly seek ways to content themselves with an intolerable present and ever harsher austerity regimes. It will be

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64 C.f., my discussion of Hayek in Chapter Two.
65 The notion of “austerity” is important in Foucault’s lectures, as it provides a means to distinguish Hellenistic-Roman exercises upon oneself from those of the early Christians and their modern cultural inheritors. Whereas to the Cynics and Stoics, austerity “bind[s] [the subject] to the truth,” it would later be used as a technique for “subjecting the subject to the law” (Foucault, The Hermeneutics of the Subject, 317.) Between the Hellenistic and the Christian cultures of austerity, “the opposition is... between a form of austerity linked to an aesthetics of existence and other forms of austerity linked to the necessity of renouncing the self and deciphering its truth” (Foucault, Ethics, 274).
necessary to raise some doubts as to the exactitude of the correspondence between Hellenistic self-care and neoliberal self-control, but what we are immediately faced with is the fact that the methodological subjectivism of the human capital theorists and their carving out an analytical space for self-governing seems to provoke a major shift in perspective in Foucault’s understanding of the “historical ontology of ourselves.” His subsequent analyses of subjectivity-quà-truth very clearly present a view of life and culture that had not been broached in his earlier work, and it is my contention that the Hellenistic model of self-care—which had been “concealed” for nearly two millennia by the pedagogical apparatus and statesmanship model of Plato and by the conversion apparatus and confessional techniques of Christianity—provides the most compelling portent for the “Gary Becker revolution.” In short, Foucault’s late articulation of his project’s “third axis” suggests a methodology commensurate with HCT’s radical valorization of the “irreducible autonomy” of the subject. This chapter will conclude by exploring the possibility of reading Foucault’s recovery of the Hellenistic-Roman model as an implicit critique of the human capitalist project rather than as a heuristic device for fleshing out its genealogy.

Following his exhibition of American neoliberalism’s radical recasting of the economic subject as one who governs herself, Foucault, as noted, turns his attention to the task of “doing the history of subjectivity… through the putting in place, and the transformations in our culture, of ‘relations with oneself,’ with their technical armature and their knowledge effects.”66 This project comes to a head in his 1982 lectures, which were initially conceived as sketches for a “parallel work” to the proposed second through fourth

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volumes of *The History of Sexuality*.

There, Foucault identifies three discrete but overlapping phases in this history—the Platonic or Hellenic, the Hellenistic-Roman, and the Christian. We can take these separately, as three distinct “reference points” for modern techniques of self-care; alternatively, we can take them together as a reminder of what modernity had to overcome in order to fully establish its particular style of truth.

Plato’s *Alcibiades* serves as the first major reference point for Foucault’s 1982 course. From this text, in which Socrates teaches moderation and self-reflection to the ambitious young statesman-to-be of the title, Foucault explicates the Hellenic world’s paradigmatic program for self-care. He highlights, among this Platonic program’s defining features, the fact that governing oneself is something that must be concentrated on specifically as a precondition for governing others. This means that the technologies or techniques of self-government are activated predominantly during adolescence and situated almost exclusively within a broader preparatory curriculum for the future rulers of Athens. Ultimately, self-care parleys into self-knowledge, which in turn informs one’s sense of justice and approach to governance. In this “pedagogic” model, then, learning to govern or take care of oneself is something that happens during youth, something limited to the cultivation of an elite class, and something always ancillary to the knowledge of oneself and, from the point of knowledge, the maintenance of the city-state.

In Foucault’s genealogy of the ethical subject, this Hellenic model serves as an essential foundation for that which would completely eclipse it by the third or fourth century of the modern era—namely, a Christian model comprising a set of monastic practices.

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67 On Foucault’s plan for his later work, see Frédéric Gros’ entry on the “Course Context” in *The Hermeneutics of the Subject*, 514. There, he also notes that Foucault had planned and drafted a fourth and final volume of *The History of Sexuality* on Christianity, to be titled *Confessions of the Flesh* (Ibid.).

68 Ibid., see especially the first and second hours of the January 13 lecture.
centered around confession, obedience, and the consolidation of a bourgeoning apparatus of pastoral power. Here, the subject interrogates itself, discovers its truth, and expressly reveals its innermost thoughts and desires—but all in the name of self-renunciation. Foucault had already discussed this Christian model at great length in his 1980 lectures, so it plays only a minor role in *The Hermeneutics of the Subject*. Its long-term effects can hardly be called into question, as aspects of pastoralism remain at the heart of the variegated evolution of modern biopower and its general concern for the optimization of life; but the specific characteristics of monastic self-care now come into play primarily as a foil for the Stoic, Cynic, and Epicurean discourses that Foucault discovers “in between” Plato and the early Christians, “hidden by” those more dominant and historically efficacious cultures of self-reflection.69

Before turning to this third, “in-between” discourse of the Hellenistic and Roman Imperial periods, we should underscore again the role of these Platonic and Christian models in the “gradual governmentalization of the state” that got underway in the sixteenth and seventeenth centuries. On the one hand, the Hellenic culture of subjectivation via self-knowledge institutes a trajectory of increasingly radical rationalism passing through Descartes on to Husserl and beyond. On the other hand, the monastic culture of subjectivation via confession commences a style of auto-interrogation that runs through Augustine to Freud.70 Each of these trajectories, however, leave the theory of the subject

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69 See, e.g., Ibid., 257, where Foucault describes how, “[t]hroughout the Hellenistic and Roman period, between Platonism and Christianity, an art of oneself was constituted, which for us will no doubt be just an episode permanently bracketed off by these two great models, the earlier and the later, which then dominated it and concealed it.”

70 But even this interpretation traffics in “false continuity,” “installing a factitious history that would display a sort of continuous development of knowledge of the self” (Ibid., 461). In modernity there emerges a “major form of reflexivity of thought” which had no precedent in earlier epochs. “Method,” as Foucault calls this form of reflexivity, “makes it possible to fix the certainty that will serve as criterion for all possible truth and which, starting from this fixed point, will advance from truth to truth up to the organization and systematization of an objective knowledge” (Ibid., 460).
woefully “undeveloped,” according to Foucault. In fact, the two lines of this forking
genealogy illustrate the essential de-subjectivating quality of modernization and its movement
“from meditation to method.” Foucault recounts plenty of attempts throughout modernity
to “reopen… the question of the subject,” but such efforts have always been marginalized
by more objective (or else trans-subjective) modes of social problematization, ultimately
“nothing to be proud of.” At best, modern attempts to think subjectivity in itself
(Foucault’s examples run from phenomenology to psychoanalysis) end up reconstituting
either the pedagogic model of Platonic self-knowledge, shorn of its origins in embodied self-
care, or the confessional model of the monastics, absent its emphasis on spiritual existence.

From the third century BCE through the first and second centuries of the current era,
a markedly different model of self-government developed which was neither Hellenic nor
Christian, one which the lasting effects of those dominant models had “concealed
historically and for later culture.” Although certain continuities between this Hellenistic
model and both the Hellenic and Christian ones become evident, Foucault insists upon its
singular importance in the “history of subjectivity.” In his February 17 lecture, after a
digression on the complex and tangled legacies of the Platonic and monastic traditions of
self-care and their respective and collective import for modern governmentality, Foucault
again reiterates the exceptionality of the set of techniques found in certain Epicurean, Cynic,
and Stoic texts. In these schools of thought, the mental and corporeal training one
undergoes in order to access the truth of existence attains a uniquely independent status with
respect to claims to knowledge and the projects of governing others. Whereas Hellenic

71 Ibid., 461.
72 Ibid., 40n6.
73 Ibid., 254.
culture identifies self-care with self-knowledge and ultimately sees these concerns as but stepping-stones to confident leadership and just legislation, and whereas early Christian culture parleys self-care into the epic struggle of self-renunciation, Foucault asserts that, “in Hellenistic and Roman culture, … the care of the self becomes an autonomous, self-finalized art imparting value to the whole of life.”

The exponents of this historically obscured Hellenistic-Roman culture of the self accordingly elaborate an ideal of conversion that refuses to translate one’s capacity for self-control either into control over others, as in the earlier Hellenic culture, or into transfiguration, as in the later Christian one.

Thusly described, the Hellenic, Hellenistic, and Christian cultures of the self supply three distinctive reference points for thinking about the formation of modern governmental power as a series of exercises relating subjectivity to truth. At the same time, taken together, these Ancient techniques of subjectivation stand as a reminder of what modernity no longer is, what modernity had to overcome or redefine in order to fully establish the sciences, philosophies, and social institutions on which Foucault’s earlier investigations had been trained. In *The Hermeneutics of the Subject*, Foucault makes it clear that these ancient forebears of modern thought each exemplify a sensitivity towards the subject as such which becomes stripped away in the institutionalization of disembodied reason, objective knowledge, and universal truth. Each of the three ancient cultures under investigation, he argues, demands a certain “spiritual transformation” in exchange for “access to the truth,” whereas modern

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74 Ibid., 254. Previously, Foucault had distinguished the Hellenistic model from the Platonic along the lines of the former’s taking the self as the “self-sufficient end… In itself, the self one takes care of is no longer pivotal. It is no longer a relay. It is no longer a transitional element leading to something else, to the city-state or others. The self is the definitive and sole aim of the care of the self” (Ibid., 177).

75 This is not to say that, for the Stoics for example, concern for the self in any way obstructs one’s view of and concern for the whole. In fact just the opposite is said to happen; the careful cultivation of oneself yields a richer, more complete perspective on nature, and even “an intensification of social relations” (Foucault, *The Care of the Self*, 53). C.f., Foucault, *The Hermeneutics of the Subject*, 277–285.
cultures make knowledge acquisition a purely intellective task. To the ancients, “[o]ne cannot have access to the truth if one does not change one’s mode of being,” but with the rise of philosophical and scientific method, an “enormous transformation” takes place, whereby “the subject as such [becomes] capable of truth.” As Foucault summarizes, “To be capable of truth you only have to open your eyes and to reason soundly and honestly, always holding to the line of self-evidence and never letting it go.” Modernity, consequently, is founded in part on what Foucault describes as “the liquidation of… the condition of spirituality for access to the truth.”

In Plato, in the Stoics, and in the early monastics, Foucault finds continual emphasis on the notion that, in order to arrive at a relationship with truth, the subject cannot remain “as he is given to himself” but must carry out specific “work… on [him]self,” must “fashion” and “modify… [him]self,” must “pay a price” that is not only spiritual but also corporeal. The moderns, by contrast, take the body out of the picture. From roughly the seventeenth century on, rigorous training and preparation—both spiritual and physical—are no longer necessary conditions for recognizing and speaking truth, and so “the notion of knowledge of the object [becomes] substituted for the notion of access to the truth.” In short, the first “major moment” of modernity—Foucault identifies it, with respect to philosophical and scientific method, as the Cartesian moment—delinks self-knowledge from self-care; a

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76 Foucault, The Hermeneutics of the Subject, 190.
77 Ibid., 190; n.b., This is a central theme in Sloterdijk’s aptly titled You Must Change Your Life.
78 Ibid., 190.
79 Ibid., 190; c.f., Foucault’s lecture on February 24, wherein he outlines the process by which “spiritual knowledge… was gradually limited, overlaid, and finally effaced by a different mode of knowledge which could be called the knowledge of intellectual knowledge” (Ibid., 308). Ultimately, as Foucault has it, “knowledge of spirituality… disappeared with the Enlightenment,” metamorphosing into a “faith and belief in a continual progress of humanity” (Ibid., 310–311).
80 Ibid., 189.
81 Ibid., 191.
second “major moment”—the Kantian—eliminates even the possibility of self-knowledge, prompting the rise of the human science disciplines, which organize around a set of concepts and practices aimed at the objectification or objectivation of subjectivity, thereby completing the inversion of the Ancient Greek, Roman, and Christian modes of relating subjectivity and truth.82

In our ongoing attempt to ascribe adequate meaning to the neoliberal revolution, we might think of the work of Hayek and Becker, among others, as constituting an epistemic event the instantiation of which can be perceived as a three-point upheaval of the modern paradigm. On the first and most evident point, their radicalization of governmentality, through expanded views of what markets can do and who can be counted as a market actor, overturns the political-economic underpinnings common to both biopolitics and traditional Marxist critique. On the second point, the preservation of and appreciation for the irrational within their subjectivist approach overturns the “scientistic” production of social knowledge that had been handed down from Descartes. Research conveyed in previous chapters has sufficiently covered these first two points. On the third point, which only comes into view with the present chapter’s speculative reading of later Foucault, the interiorization and intensification of governmental techniques embodied in the concept of the self-entrepreneur overturn the whole of the pastoral tradition that had started with the early monastic cultures of self-renunciation.

In short, the event of neoliberal thought is marked by three reversals: a reversal of the relationship between society and the state; a reversal of the relationship between

82 A number of passages indicate that one of Foucault’s critical targets in his genealogy of the subject remains the rise and domination of human sciences (see, e.g., Ibid., 188).
knowledge and truth; and a reversal of the ethical production of the subject as a series of
techniques one applies to oneself. We will need to look more closely at the Hellenistic and
Roman Imperial models of subjectivation in order to better flesh out the nature and
significance of this third reversal, for it is precisely at this point that its differences with
respect to the monastic model become even more consequential than their continuities.83

My contention, just to be clear, is that what Foucault discovers “hidden” from
modernity, “concealed” by the Platonic and Christian governmental legacies, is a model of
subjectivation that neoliberalism restages or redeployes within its own problem field. The
distinguishing characteristics of this particular “art” of self-care—its autonomy with respect to
knowledge and obedience, its autotelic momentum, its valuation of each life itself rather than
some privileged form or transcendent state of being, and its constancy of application—all echo
what Foucault had found three years earlier in the Chicago School’s radical reconfiguration
of the target and method of political-economic discourse. In HCT, the self become
inseparable from its capital; the self becomes capital. Whether working, consuming, investing,
spectating, or “surfing,” the subject is actively engaged in the production of a “market good”;
as such, this subject is understood to exist for itself in a permanent process of reflection and
revaluation. Each decision about how to allocate one’s time and energy involves a tacit
consideration of oneself as an autonomous subject (no matter how saturated in “control”
technologies one may be), a subject endowed with scarce resources and steeped in the
necessities of risk-taking and reinvesting returns, a subject with infinite options but severely
restricted capacities to effect its overarching environment.

In setting the Hellenistic model apart from those of Hellenic and monastic cultures,

83 See note 63 above, on the condensed exposition of the Roman model in The Care of the Self.
Foucault pays special attention to its particular use of mediators—technological interfaces, filtration devices—in conditioning the subject’s relationship with itself. Writing, put to work as a “technology of the self,” plays a vital role in this Hellenistic style of subjectivation. In contrast to self-writing in early Christian cultures, whereby inscription became a hermeneutic means of conferring, of “dislodging the most hidden impulses from the inner recesses of the soul,” self-writing evolved for the Greeks and Romans, initially in Hellenic culture, as an aide de mémoire, a way of “internalizing truth” and etching basic rules for thought and action into the very substance of one’s being. Recounting the ancient concept of hupomnèsis, first theorized by Plato to describe the role of writing in the processes of cultural transmission and epiphylogenetic evolution, Foucault describes how, for Hellenic cultures, huponnemata—essentially, personal notebooks, first in the form of scrolls, then reusable wax tablets, then folded parchment—allowed each individual to select and recall pertinent fragments of the whole of “the already-said,” not unlike how we think of techniques of “sampling” and “remixing” in the digital media cultures of the twenty-first century. In this way, an individual could replay the lives and lessons of others long passed; one could have memories that were not one’s own.84

From the third through first centuries BCE, a vital transformation occurs in the utilization of writing for the project of subjectivation. What had been primarily a pedagogical supplement in Plato, ancillary to the preparation of elite youth, became, for the Stoics and others, an essentially ethical practice, still mainly limited to an elite set but now extended over the entire duration of one’s life. Plato had treated hupomnèsis as a step along the path towards a fuller knowledge of oneself and, beyond the self, towards a fuller knowledge of

84 “Self Writing,” in Foucault, Ethics, 221.
one’s people and its history. For Seneca, Epictetus, and Marcus Aurelius, for example, the goal would be at once more modest and more demanding—“to make one’s recollection of the fragmentary logos, transmitted through teaching, listening, or reading, a means of establishing a relationship of oneself with oneself, a relationship as adequate and accomplished as possible.”

To establish such a relationship (the circularity of which closely resembles the cybernetic feedback loops examined elsewhere), Stoic philosophers developed a more precise practice involving *hupomnemata*. No longer just a prototypical sampling device, *hupomnemata* came to include personal “account books… registers” in which one would draw up each day’s balance sheet, comparing what one had set out to do with what one actually managed to achieve. Whereas writing remained secondary to oral dialectic in the Hellenic cultivation of the self, by the Hellenistic age, “taking care of oneself became linked to constant writing activity. The self is something to write about, a theme or object (subject) of writing activity.” Beyond its selection and storage functions, then, writing acquires an *accounting* function that plays an increasingly central role in mediating and facilitating the ethical life of the Hellenistic subject. This technique of accounting for oneself, also evidenced in the important practice of letter-writing that became prevalent around the same time, is thus “among the most ancient Western traditions… well established and deeply rooted [by the time] Augustine” popularized its deployment in the name of self-

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85 Ibid., 211.
86 There remains much to be said about the relationship between cybernetic principles and Foucault’s understanding of Greco-Roman governmentality, especially insofar as it developed through a series of metaphors regarding navigation and steering. In a long note to his lecture of February 17, 1982, Foucault recounts details these many metaphors, beginning with a reminder that “the *kubernetes*, the person responsible for the conduct and direction of a ship, is given in Latin as *gubernator*” (*The Hermeneutics of the Subject*, 267n7).
88 Ibid., 232. In an aside that has significant implications for our discussion of telematical technologies in Chapter Three, Foucault notes that, for the Greeks and Romans, *hupomnemata* would have been “as disrupting as the introduction of the computer into private life today” (*Foucault, Ethics*, 272).
This centripetal model of self-writing provides an important point of contrast to the Christian techniques that would quickly come to obscure its functions in the “genealogy of the ethical subject.” Nowhere is this more clear than with respect to the general movement of truth and its particular form of utility for the individual seeking either to better control or more cleanly rebuke the various passions of life. The Christian tradition enjoins the guilty individual to publicly expel the truth about oneself; whether this takes place verbally under the supervision of a confessor or visibly in the pages of one’s diary, the effect is an exteriorization of truth and an objectivation of oneself. The Hellenistic model, through writing and repetition, subjectivates truth, brings it into oneself after a period of intense preparation, changing it and giving it new life with each singular incorporation. Writing here acts as a governor or regulator, in the technical sense of those words, a device without which the autonomization of the subject, with its customized project of self-control, would never take place. In Hellenistic culture, subjectivation of truth occurs through a series of repetitious inscriptions—on the page, on the mind, and on the body. Wrested from pretentions to transcendentalism and universalization, logos becomes a material medium for the ethical-aesthetic project of self-construction, a set of rules by which one maintains composure in times of struggle, or, in Foucault’s encapsulation, “inductive schemas of action which […] are such that when present in the head, thoughts, heart, and even body of someone who

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89 Foucault, *Ethics*, 232.
90 This style of accounting however, does have an interesting resonance with the practice of double-entry bookkeeping that came to West in the late fifteenth century. For Luca Pacioli, who scholars believe to have been the first to formally describe Italian accounting standards in his influential 1494 book *Summa de arithmetica, geometria, proportioni et proportionalita*, double-entry bookkeeping provides economic life with a comparable technique. The regular use of a “counter-roll,” as he calls it, “provides the merchant with continued information about his business and allows him to evaluate how things are going and to act accordingly” (Lauwers and Willekens, “Five Hundred Years of Bookkeeping: A Portrait of Luca Pacioli,” 296). Only in HCT do writing as a technology of the self and writing as a technology of the enterprise finally coincide.
possesses them, that person will then act as if spontaneously.”

This sort of simulated (“as if”) “spontaneity” found in Stoic rule-following appears anew, I believe, in Hayek’s cybernetically-attuned notion of “abstract” governance, whereby “rules of which we are not conscious… enable us to exercise extremely complicated skills.”

In Becker’s all-encompassing microeconomic approach, the cultivation of the self comes to look even more like what Foucault draws out of Hellenistic culture. To the human capital theorist, the market actor—like the social actor more generally—essentially trains herself to “respond to reality” in ways that take stock of her sum of life investments and are most concordant with her own preferences, desires, and goals. What Hayek saw as a blueprint for the regulatory maintenance of market relations, which had evinced a governmentality still pegged to the terms of analysis Foucault had set out in 1978, Becker deploys as an existential technique. The Hellenistic model, whereby truth is less something that one knows than something that prescribes an action or response, resounds throughout the movement of “soft paternalism” and what we might call neoliberalism’s incentivization of governmentality.

Like the Stoic subject’s “automatic […] reactivation” of rule and truth, the human capitalist constructs her ethos through continual reminder and revaluation of her various economic, social, familial, etc. investments. Her behavior always actuates a truth, which to the economistic observer translates into a milieu of prices. In other words, the reality to which

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91 Foucault, *The Hermeneutics of the Subject*, 323. Closing that same lecture, Foucault summarizes *logos* in the Hellenistic model as something “[w]e must have ready to hand… we must have it, so to speak, almost in our sinews. We must have it in such a way that we can reactualize it immediately and without delay, automatically.” The memorization exercises of *askesis* make it such that “[a] saying can be integrated into the individual and control his action, becoming part… of his muscles and nerves,” so that, “when the event occurs, the *logos*… itself [becomes] the subject of action… [and] the subject of action… without even having to utter [the phrase], acts as he ought to act” (Ibid., 326 (emphasis added)).


93 On “prescriptive truths,” see, e.g., Foucault, *The Hermeneutics of the Subject*, 236–237.

94 On “soft” or “libertarian paternalism,” see the enormously influential work of Richard Thaler and former Obama Administration “Regulatory Czar” Cass Sunstein, most notably their co-authored book *Nudge: Improving Decisions about Health, Wealth, and Happiness*. 

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the human capitalist responds and the truth which she embodies are never not conceivable as an inherently incomplete set of price signals.

Neoliberalism thus cultivates the conditions for one to experience her subjectivity in such a way that every decision unfolds in the form of a tacit utility function, subconsciously weighing an incessant stream of marginal costs. The human capitalist or self-entrepreneur continually reproduces her enterprise through techniques of self-investment made in accordance with an ever-changing and singularly intensive relationship with a market that governs from within. Here, it is the truth of the market, the truth “spoken” by the market, which enters oneself through the process of subjectivation—that which becomes embodied, spiritualized, and transfigured at the same time as it supplies the verdict on one’s extant investments in herself. In the totally marketized universe arrived at through Becker’s “economic approach,” all sites—whether actual or virtual, public or private, social or psychical—become “sites of veridiction.” No episode comes to pass which cannot be experienced as a test of one’s mettle.

The ubiquity—we might even say the relentless chatter—of truths spoken by the neoliberal market puts us finally in a position to address the theme of parrhesia, or truth-speaking, which enters Foucault’s thinking towards the end of the 1982 lectures and remains the foremost conceptual concern through his final courses at the Collège de France, The Government of Self and Others and The Courage of Truth. Despite making no appearance in the later installations of The History of Sexuality, Foucault’s elaborations on the concept—which translates most directly as “frank speech” but is most often construed in more political terms to mean something along the lines of “speaking truth to power”—have received significant scholarly attention, especially in Anglophone circles. In part, this is because parrhesia
provided the central touchstone for a series of lectures on “Discourse and Truth” that Foucault delivered at Berkeley in 1983 and which have been in print for more than a decade. More importantly, however, Foucault’s late invocations of the truth-speaker (parrhesiastes) admit into his philosophy a compelling image of ethical and political agency, which would occupy the space theretofore reserved for the severely cramped subject who, in Foucault’s earlier works, remained little more than an object of knowledge or a target in the application of institutional power. The figure of parrhesiastes, in effect, inverts the dominant, dismal portrait of the modern subject with which Foucault otherwise leaves us. It would thus seem that a positive political project finally becomes thinkable for Foucault.

But where does this leave us with respect to neoliberalism and its omnipresent price system? How might this return to the Greeks function, as Foucault suggests it should, as “a tool for analyzing what’s going on now”? Rather than further extol the parrhesiastes as a necessary figure for our times, I propose a return to the context of its emergence within Foucault’s thinking. While the concept of parrhesia dominates Foucault’s final phase of research, in The Hermeneutics of the Subject, it appears only secondarily, as an offshoot to Foucault’s ongoing discussion of the more prominent role of askesis in the self-cultivation practices of the Hellenistic and Roman Imperial periods. On Foucault’s reading, askesis designates those techniques and exercises by which one prepares oneself to gain access to true discourse—that is, to internalize, embody, and transform the truth. In Hellenistic and Roman cultures, this notion of askesis brings together such activities as meditation, memorization, fasting, sexual abstinence, posture exercise, and prolonged periods of silence,

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95 Foucault, Fearless Speech.
96 Foucault, Ethics, 261.
97 Foucault commences his exposition of the Greek concept of parrhesia, as “ethical attitude and technical procedure,” in the first hour of his March 10 lecture (Foucault, The Hermeneutics of the Subject, 355–394).
the goal of each being to aid in the lifelong process of self-care. The genealogical value of *askesis* to Foucault’s late project should by now be fairly obvious, as it indexes an ethos of “severity” essential to the self-construction of subjective experience but, unlike its Christian counterpart, does not pursue such measures in the name of escape or renunciation. The *ascetic* stands in a permanent relation to the truth of her existence; to the Hellenistic and Roman authors, her preparation is what makes the transmission of truth possible. Before one can enact the telling of truth as a genuine *parrhesiastes*, one must first be prepared, which is to say one must first have a sense of what it is and what it means to be a subject in the experience of truth. Unlike in the cases of the sovereign, disciplinary, or biopolitical exercise of power, Hellenistic *subjectivation* is not a coercive procedure; it simply names “the way in which people are invited or incited to recognize their moral obligations [to themselves].”

Significantly, the *ascetic* is not the *parrhesiastes*, though the two figures are inextricably bound to each other. The *ascetic-parrhesiastes* pair forms the paradigmatic power relation among elite men within Hellenistic and Roman Imperial cultures. There is no hierarchy here, no *techniques* coupling these two together, only a mutually affirmed belief that one ought to take care of oneself and a mobile discourse of truth passing between them. But what does this mean, or what relevance can this have, in an age when the truth—of governmental practices, of subjectivation techniques, of one’s investments in oneself—is held to arise exclusively in the form of a price? Foucault’s impassioned interest in *parrhesia* might best be read as his *response* to “what’s going on now,” that is, an attempt to give shape to an idea of truth that has been long concealed by the historical evolution of the subject, buried in the deepest recesses of our cultural memory. But the complementary concept of *askesis* seems a

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98 Foucault, *Ethics*, 264 (emphasis added).
more appropriate analyzer of our present situation, especially given Foucault’s lucid documentation of the methodological feats of HCT. While there may not be anyone today capable of speaking truth as persuasively as the impersonal and abstract mechanism of the market, there are plenty who have trained themselves to listen for it and respond to it, from wherever it may come.

Since our primary objective here has been to clarify the meaning of the neoliberal event, we must look past the undeniable critical appeal of parrhesia and conclude that the radically subjectivist perspective emerging from Becker’s theory of the self-entrepreneur, which provides the presiding blueprint for the cultivation of the self in the age of financial capitalism and telematic cultures, is precisely the perspective of the Hellenistic-Roman ascetic that was born “in between” the Platonic and Christian models. To the human capitalist, as a permanent investor in herself and an embodiment of illiquid capital invested just so, life is precisely not a “game” but a series of “tests,” through which she endlessly refines her commitment to her enterprise.99 As we have seen, contrary to the Hellenic tradition, which, yokes the question of the care or government of oneself to that of selfknowledge in the service of the care or government of others, Hellenistic and Roman Imperial cultures isolate and prioritize the question of care and refuse to extrapolate from the “arts of existence” any sort of principle for the hegemonic exercise of power over others.100 Contrary to the monastic tradition, which seeks to expel and expunge all traces of the self in preparation for

99 In The Hermeneutics of the Subject, Foucault addresses the function of “tests” in the Stoic practice of self-care in the second hour of his March 17 lecture (Foucault, The Hermeneutics of the Subject, 437–452).
100 See, e.g., Foucault’s argument that, “during the Hellenistic and Roman period there is the increasingly marked absorption of philosophy (as thought concerning truth) into spirituality (as the subject’s own transformation of his mode of being.” As distinct from the Platonic model, “there is an increasingly pronounced identification of the art of existence (the tekne tou bioi) with the care of the self, or, to put things more tightly, identification of the art of existence with the art of oneself” (Ibid., 178).
access to the universal truth of the Kingdom of God, they exhibit a model of subjectivation constituted through an unremitting inward turn.\textsuperscript{101}

In each of the three historical reference points, Foucault distinguishes a unique treatment of the concept of “conversion,” which he holds up as “one of the most important technologies of the self the West has known.”\textsuperscript{102} The Platonic \textit{epistrophe} designates a sense of conversion realized as “knowledge in the form of recollection,” achieved through a retreat to essences and the soul’s evacuation of the body.\textsuperscript{103} The Roman \textit{se convertere ad se} designates a sense of conversion realized “in the adequacy of self to self” through constant “exercise, practice, and training.”\textsuperscript{104} Finally, the Christian \textit{metanoia}, posits conversion as the result of “a single, sudden… event which drastically changes and transforms the subject’s mode of being at a single stroke.”\textsuperscript{105} While the Platonic and the Christian notions exhibit rather significant differences, they both attest to an idea of conversion as a “liberation” from oneself—from one’s ignorance, one’s body, one’s history, and so on. The Hellenistic-Roman model stands alone in projecting “the establishment of a complete [and] perfect… relationship of self to self.”\textsuperscript{106} On this model, the experience of the subject takes shape neither through “opening up… as a field of knowledge” nor through “exegesis and decipherment,” but through what Foucault calls a “teleological concentration,” which I believe describes the human capitalist subject—as a \textit{project} of self-control—just as well as it does the two-thousand-year-old

\textsuperscript{101} See, e.g., Ibid., 319.
\textsuperscript{102} Ibid., 208.
\textsuperscript{103} Ibid., 209–210.
\textsuperscript{104} Ibid., 210.
\textsuperscript{105} Ibid., 211.
\textsuperscript{106} Ibid., 210; c.f., Foucault’s condensation of this discussion in \textit{The Care of the Self}, where he interprets the Latin \textit{conversion ad se} in terms of “a path by which… one ultimately rejoins oneself, like a harbor sheltered from the tempests or a citadel protected by its ramparts” (Foucault, \textit{The Care of the Self}, 65).
Hellenistic ascetic.\textsuperscript{107} Whereas the historically predominant Platonic and monastic cultures take the self as something given, something to get beyond, the “hidden” Hellenistic-Roman culture sees the self as something that must be perpetually carried out.

American neoliberalism—particularly with Becker’s theorization of human capital and the subsequent expansion of economic analysis into all domains of life—marks the entrance of the subject as such, in its self-sustaining and irreducible subjectivity, into the rationality of modern governance. It thus provides, as I have argued, no small motivation for Foucault’s own methodological pivot away from questions of social power and the institutionalization of objective truths and towards questions concerning the evolution of subjective experience. On their own, the Platonic and Christian legacies would seem to provide Foucault with ample material for a convincing “historical ontology of ourselves.”\textsuperscript{108} Foucault’s investigation of Hellenic and early Christian models, which supply the predominant epiphylogenetic materials constituting modern culture, ultimately fail to generate adequate reference points for the self of HCT’s self-Enterprise, the subject who conducts oneself as a work of ongoing investments. It would take Foucault three years to delineate a befitting precedent for the provocative theory of the subject—and distinctly post-modern culture of subjectivation—emerging from American neoliberal discourse. His 1980 and 1981 courses lay out the general methodology but not yet the specific genealogical reference points for grasping the full significance of capitalism’s imminent neoliberal turn. Only in the recovery of the Hellenistic and Roman permutations of subjectivation do we observe a sense of selfhood as a permanent process, a self that is not something to be

\textsuperscript{107} Foucault, \textit{The Hermeneutics of the Subject}, 222.

\textsuperscript{108} See, e.g., Agamben, \textit{The Highest Form of Poverty}; Agamben, \textit{Opus Dei} on the persistence of monastic ideas within modern governmental techniques.
known once and for all, nor something to be renounced and transcended, not something to be subordinated to one's capacity to govern others.

The ethos that emerges from Hellenistic and Roman cultures is characterized by a particular set of “technologies of the self” that were absorbed into modern culture sidewise, or else entirely obscured by the influence of both earlier and later models. In its radical break with modernity’s peculiar social problematizations and strategic solutions, neoliberalism, as I have explained it, attempts to think the subject precisely as the Stoics and others had, that is, in terms of the experience one has of oneself, which, notably, is always a technological experience. Recall that Becker and Schultz had revised classical investment theory’s tripartite rubric of land, labor, and technology (i.e., fixed capital) not only by broadening the category of labor to include the perspective of the laborer as an investor in and producer of herself, but also, and more provocatively, by broadening of the category of fixed capital to include the perspective of the human, in whatever mode of activity, as a technology (of) oneself. This posthuman capitalist—whom we outlined as an object of scientific study in Chapter Two and as both a vector of financial markets and a junction of control tactics in Chapter Three—now reveals itself to be our passkey to subjective experience, to paraphrase Foucault, the oldest artifact of modernity. Perhaps neoliberalism is not the break from modernity that we have imagined it to be; perhaps our self-enterprising subjectivity is the most modern thing about us, after all.

109 As Foucault puts it, “We should think of the skill that is united with the worker as… the side through which the worker is a machine, but a machine in the positive sense, since it is a machine that produces an earnings stream… a machine-stream ensemble” (The Birth of Biopolitics, 224–225).


