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Rereading Foucault on Technology, Variegation, and Contemporary Power

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Geography

by

Nicholas Ferris Lustig

2014

ABSTRACT OF THE DISSERTATION

Rereading Foucault on Technology, Variegation, and Contemporary Power

by

Nicholas Ferris Lustig

Doctor of Philosophy in Geography

University of California, Los Angeles, 2014

Professor Michael Curry, Chair

This dissertation is a critical engagement with, and creative extension of, the work of French

scholar Michel Foucault. While Foucault has been among the most read and influential scholars of the last

fifty years, the reception of his work has become stultified in what one commentator has called a

"Foucault consensus". Through four essays and four book reviews this dissertation seeks to explore new

avenues into Foucault's work, underappreciated aspects of his analyses, new possibilities for extending

his work, and ways his work must inform an indebted step beyond it. In a time of dramatic

transformations in our technologies, institutions, cities, systems of power, relations of time and space, and

possibilities of resistance, it is critical for us to reconsider our basic concepts. Returning critically and

creatively to the work of Foucault from amidst the present situation can provoke new perspectives on his

work and improved analyses of the present.

The first chapter is a lexicon of thirteen terms from his genealogical period that have been

underappreciated but hold considerable analytical value not only for creative rereadings of Foucault's

work but for contemporary analysis of newly emergent relations and systems of power. The terms include

'agitation', 'combinatory compositions', 'continuum', 'correlations', 'distribution', 'ensemble',

'experiment, 'extract', 'forces', 'invest', 'multiplicity', 'network,' and 'seriation'. The book review accompanying this chapter is on the collection *Michel Foucault Key Concepts* edited by Dianna Taylor. This uneven collection is here praised for its efforts to connect Foucault's work to contemporary dynamics, but faulted for some of its lackluster readings of central terms in Foucault as well as its focus on Foucault's weaker later period.

The second chapter of this dissertation looks at Foucault as a scholar of technology, an aspect of his work that has received surprisingly little attention. This chapter argues for the importance of the concept of 'technologies of power' to Foucault's rethinking of power in such a way as to distinguish his version from other scholars and schools, and to capture the distinctiveness of modern systems of power and disciplinary power in particular. This chapter also explores the role of machines in Foucault's analysis of modern power. The book review that follows chapter two is on Johanna Oksala's *How to Read Foucault*, which offers some interesting insights into Foucault's conceptualization of resistance, but overall fails to offer the creative and updated reading promised by this series.

The third chapter of this dissertation examines some echoes and possible supplements between the work of Foucault and the variegated political economic analyses of Jamie Peck, Neil Brenner, and Nik Theodore. By reading these studies of variegation as a theory of power, and reading Foucault through the lens of some of the key points of this framework, this chapter seeks to draw attention to some overlooked moments in Foucault's texts while also arguing that his framework could be modified and improved through a selective synthesis of his work with some arguments from Peck-Brenner-Theodore. The book review following this chapter is of Gilles Deleuze's *Foucault*. While in admiration of the creativity and freshness that Deleuze brings to his reading of Foucault, this review takes issues with Deleuze's conceptualizations of power, technology, space, and resistance in Foucault.

The fourth chapter examines the Real Time Crime Center in New York City. This chapter seeks to both work within a lineage of Foucault and move beyond his analysis of disciplinary power. It is argued that the Real Time Crime Center is indicative of a newly emerging ensemble of power that is better described as a set of 'control programs'. The main features of control programs are detailed. The

book review at the end of this chapter is on Jeffrey Nealon's *Foucault Beyond Foucault*, which also attempts to decipher what in Foucault is still relevant to contemporary thought, how his work needs to be re-read, and what new connections and supplements are needed for Foucault's continuing relevance for contemporary analysis. The spirit of Nealon's work is praised, but the execution and details are considered disappointing.

The dissertation concludes with a brief chapter summarizing the work and discussing how it will serve as a platform for my own future studies.

The dissertation of Nicholas Ferris Lustig is approved.

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Introduction

This dissertation is a critical engagement with, and creative extension of, the work of French social theorist Michel Foucault. While Foucault has been among the most read and influential theorists of the last fifty years, the reception of his work has become stultified in what one commentator has called a "Foucault consensus" (Nealon 2008). Through four essays and four book reviews this dissertation seeks to explore new avenues into Foucault's work, underappreciated aspects of his analyses, new possibilities for extending his work, and ways his work must be updated or moved beyond to study the dramatically transformed conditions of the present.

The motivation for this project is in an important sense very personal. Foucault has been my main influence and interlocutor since my time as an undergraduate at Berkeley. I wrote an Honor's thesis on his work, examining the interrelations of his analysis of power, subjectivity, and ethics and comparing his positions with those of Stanley Cavell and Theodor Adorno. Foucault's formulations on power, subjectivity, knowledge, resistance, history, disciplinary power, sexuality, resistance, and ethics became cornerstones of my own thought. Beyond being immensely pleasurable to read, both because of his style and subject matter, I felt provoked by him. Every time I returned to Foucault I felt that I was reading something new, seeing something in his text that I had not seen or appreciated properly in previous readings. His texts were fertile grounds for new thoughts. The present dissertation seeks to capture some of the 'focused inventiveness' I see in Foucault—an attention to detail coupled with a spirit of challenge and creativity.

As a young graduate student I became interested in surveillance studies since the practices of surveillance had so captivated Foucault, the techniques of surveillance seemed to have become so much more pervasive and powerful since his death, and the literature on surveillance quite rightly included Foucault as the preeminent influence and reference. In my master's thesis I modified Foucault's notion of

'governmentality' into a framework for studies of urban phenomenon—'urban governmentality'—and used it to catalogue and explain some of the myriad examples of surveillance systems spreading through urban areas. While the framework of governmentality proved less and less compelling to me, the experience of writing the master's thesis was a clear step forward in my relation with Foucault. While the undergraduate thesis had focused more on summarization and comparison of three theorists, the master's pushed my work in the direction of a creative engagement with Foucault's work. I could read Foucault not so much to better understand what he said, but rather to formulate my own positions through his work—a non-derivative yet still indebted relation.

As I continued in graduate school, Foucault remained the central influence of my work. The core questions that drive me all stem from the intersections between power, subjectivity, group compositions, resistance, dysfunction, technology, surveillance, and cities. Some of these dynamics Foucault is well-known to have addressed directly. His conceptualizations of productive power, disciplined docile bodies, ubiquitous resistance, and modern institutional surveillance have all provided seminal reference points for a wide range of discussions across the academy. Yet in many of these discussions there has emerged what Foucault scholar Jeffrey Nealon refers to as the "Foucault consensus" (Nealon 2008). The readings seem to focus on the same core terms; the orthodoxies around power, subjectivity, resistance, and ethics in the work of Foucault seem pretty well established, known, integrated, and used; and it is rare to find fresh and provocative readings of Foucault (a couple of the works reviewed in this dissertation testify to this). This consensus, while informative of solid scholarship, has also prevented creative engagements and extensions of Foucault's work.

While seeking to avoid the 'Foucault Consensus' I also did not want to 'Forget Foucault' as theorist Jean Baudrillard has suggested (Baudrillard 1987). For me, Foucault's thought remains the most compelling and provocative source of ideas for how to think about power and control. But increasingly I have sought to ask a different set of questions about Foucault. What are the untapped conceptual resources in his work? What are readers and users of his work missing as they focus on most well-known terms? How might we return to Foucault's work but now guided by some of the other great work done on

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systems of power since his death? What can Foucault teach us about technology, both during the time he focused on in his own work but also now? How must his work be updated or how must we move beyond his work to capture the fundamental changes we are witnessing all around us?

These last questions speak to the demands of our situation. There have been stunning innovations in technology, information and communication technologies in particular, and these have led to changes in all aspects of our lives. Our cities are currently undergoing a widespread technological restructuring, our systems of communication and our wider culture are shifting towards digitalized forms of interaction, our major institutions are integrating information technologies into their basic operations, and our senses of self are undergoing dramatic transformations as the systems that construct us as subjects interpellate, supervise, reward, and punish us in ways dramatically different than a couple decades ago. In a time of dramatic transformations in our technologies, institutions, cities, systems of power, relations of space-time, and possibilities of resistance, it is a critical moment for us to reconsider our basic concepts.

While our systems of power have become more decentralized, data-driven, informated, networked, and flexible than any systems analyzed by Foucault, his work on power, surveillance, control, and subjectivity should remain central to our understandings of these new dynamics. Yet the new situation also calls for a renewed reading of Foucault, both through the lens of the major changes that have taken place, as well as through work by other scholars who have tried to conceptualize these dynamics. There are still untapped conceptual riches in Foucault, and the current situation can help us frame a return to Foucault to find them.

The present dissertation is in part an attempt to return to Foucault not only to ask new questions but to develop new concepts, or uncover or emphasize concepts in his work that have been underappreciated or overlooked but which have a compelling relevance not only for our understandings of Foucault, but for our present efforts to understand the sweeping changes in our cities, institutions, economies, and cultures. Returning critically and creatively to the work of Foucault from amidst the present situation can provoke new perspectives on his work and improved analyses of the present. Rethinking power, technology, space, time, and subjectivity are the core of this project. Each of the

chapters of this dissertation seeks to rethink these terms by both remembering and revitalizing the work of Foucault; to read him again, but read him differently.

My Foucault

In this section I outline some of the primary principles of my own reading of Foucault. These principles serve as the points of emphasis in my efforts to distinguish my own interests in and appropriations of Foucault from the already very large secondary literature on his work. They are a mix of what I find most compelling in Foucault, what has been unfortunately overlooked within his work, what is most valuable for contemporary readings of him, and what in his work signals possible new directions for readings, applications, and supplements for a revitalized Foucauldian framework useful for contemporary studies of power.

My Foucault is centered on the genealogical writings he published during his lifetime. While an immense amount of scholarly attention has been lavished in recent years on Foucault's lecture courses (which he wished to remain unpublished) and his later work on ethics, the Foucault I am most fascinated by is the one that transformed our understanding of power through his innovative, rigorous, detailed, and compelling examination of the emergence, spread, and consolidation of a regime of disciplinary power. Some of the foci of Foucault's work in this period that I find most decisive for not only reading his work but also developing my own include: new definitions of power as productive and technological, descriptions of different historical regimes of power, an historical sequencing of these regimes, analyses focused on the consistencies and distinctions between techniques and targets of power in major institutions, investigations of the intersections between systems of power and forms of knowledge, identifications of the techniques and features of historically and institutionally specific constructions of subjects, an emphasis on the role of physical bodies, and an awareness of subjects' participatory complicity within as well as the capacity to refuse and resist the impositions of systems of power. The genealogical period of Foucault is immensely rich in concepts and descriptions. And while the vast majority of Foucault scholarship over the last several decades has focused on this period (even with recent

shifts towards his lectures and late work), I believe there are still particular concepts and aspects of his

historical descriptions of relations of power that have been overlooked or underappreciated. While much

of the work that has made Foucault so influential among so many scholars has been influential for me as

well, I also think there are many moments in and avenues through his genealogical work that could still

be profitably explored not only for the sake of richer and deeper understandings of Foucault, but for

improving contemporary scholarship that is indebted to his innovative ideas on the systems and evolution

of power.

     My Foucault is also focused on technology. Such an interest in the function of technology in

Foucault and the ways in which Foucault can help us conceptualize technologies (in particular in their

role as instruments of power) is in part motivated by a desire to analyze and critique contemporary

technologies and how they are used as instruments of social control. I am certainly not alone in this

interest in intersections between Foucault and contemporary technologies. The development of a wide

array of new information and communication technologies, as well as their transformations of the

operations of institutions and systems that serve as the organizing mechanisms of contemporary life, have

provoked many scholars to turn to Foucault in order to apply his ideas on power, discipline, surveillance,

and subjectivity to understand the reconfigurations of the present. While questions of the contemporary

utility of Foucault also interest me, and I discuss them some more below, the need to understand the

impacts of these new technologies also provoked in me the desire to reconsider the role of technology

within Foucault's own work. How did Foucault conceptualize technology? What is its relation to his

formulation of productive power and disciplinary techniques? How does Foucault talk about the

artifactual? What are the similarities and differences between Foucault's definition and analysis of

technology and other important philosophers and theories such as Heidegger and Actor-Network-Theory?

     After rereading Foucault with these questions and motivations in mind, what became quickly

apparent was how surprising it was that interpretations of Foucault have not emphasized the technological

in Foucault nearly as much as they should. While occasionally in accounts of Foucault's work a scholar

will cite Foucault's phrase of 'technologies of power' or his calling of the disciplines a type of 'micro-

technology,' there is never any substantial explanation of why Foucault uses these terms. Yet within Foucault's *Discipline and Punish* nearly every page of the central chapters' discussion of the disciplines has some of mix of the terms mechanisms, procedures, instruments, machines, machinery, techniques, technical, and technology. Indeed, at one point Foucault remarks that one of the definitive features of modern systems of power (specifically their intertwinements of knowledge and power) is their passage of a "'technological' threshold" (Foucault 1979, 224). So a central feature of my Foucault, and a principal motivation for some of the work done in this dissertation, is to examine why and how technology is so critical to understanding and applying Foucault.

My reading of Foucault is also attentive to what, following Foucault, I refer to in the Chapter 1 Lexicon and elsewhere as 'agitation.' Systems of power are often depicted as pitted against forces of resistance. This is no doubt true in Foucault, and his conceptualization of ubiquitous and effective practices of resistance has been a major legacy of his work. But there is in Foucault, in particular in *Discipline and Punish*, an interest in the ways in which what happens within relations, institutions, and systems of power is plagued by the existence of phenomena that while not as organized or intentional as practices of resistance, still trouble, provoke, and disrupt the operations of power. These forces of agitation, such as talkative schoolchildren, recalcitrant workers, unruly patients, looting soldiers, disorganized masses, and other practices are not meant as direct challenges to power or efforts to overturn a regime, but nonetheless serve as sources of dysfunction.

Not nearly enough attention is paid to such phenomena, not only in readings of Foucault but in wider scholarship as well. One of the reasons I am attracted to the work of Jamie Peck, Neil Brenner, and Nik Theodore on variegated capitalism, and use their work to reread Foucault in one of the chapters of this dissertation, is that their work is particularly sensitive to how capitalism as a system of regulation is repeatedly buffeted by contestations, contradictions, dysfunctions, and crises in addition to organized forms of resistance and insurgency. Foucault too was aware of these phenomena and his *Discipline and Punish* includes myriad examples of how mundane forms of chaos and disorder interrupt the smooth functioning of power. Systems of power face obstacles, break down, are provoked to evolve not only by

the forces that organize to resist and challenge them, but also by a wide variety of practices and events. In order to better understand how power operates, both within Foucault, within historical studies of systems of power, and within contemporary studies of institutions, networks, and multi-scale systems of power, the disruptive forces of agitation must be taken into account.

My Foucault is also an updated Foucault. I mean this in three interrelated ways: new applications, new readings, and selective supplements. First, while much of this dissertation explores readings of Foucault's own work rather than applications of that work to contemporary phenomenon, the ultimate purpose of the rereadings of Foucault found in this dissertation are to develop a framework indebted to Foucault but useful, original, and compelling in its analysis of contemporary relations, institutions, and systems of power. Part of that project is to determine what concepts and descriptions of power in Foucault are still relevant and applicable today. This kind of updating takes his terms and applies them to new phenomenon. For me, despite the substantial transformations in contemporary systems of power, there are still significant amounts of Foucault that remain relevant and applicable. Arguments from philosophers such as Gilles Deleuze (1992) on shifts away from disciplinary power and Jean Baudrillard (1987) on the emergence of simulations and the supposedly consequent irrelevance of Foucault, should not obscure for us what is still alive and useful in Foucault. But his work, or our reading of his work, also needs to be updated to maintain and enhance his utility.

The second update is akin to but distinct from the first. This second update reads Foucault differently, through then lens of, or an engagement with, some of the high quality scholarship done since his death. This does not necessarily mean work done within the lineage of Foucault, but rather work that for any number of reasons can shed new light on Foucault, open new avenues in his thought, reveal significant moments in his work that have been overlooked. The main example in this dissertation of this kind of update is the rereading of Foucault in Chapter 3 through the lens of Jamie Peck, Neil Brenner, and Nik Theodore's work on variegated capitalism. But there are other smaller influences, or contributors to the rereading of Foucault conducted here. Peck-Brenner-Theodore help reveal significant but overlooked moments in Foucault on transitions between regimes of power, the spatialities and temporalities of the

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diffusion of specific techniques of power, and the multiple causes and consequences of the evolution of power; meanwhile, for me, Deleuze opens up opportunities to see in Foucault the presence of what I call a minimal materialism; and the work of Autonomist Marxists, though not a major presence in this dissertation, are the source of a provocation for me to reread Foucault with an interest in how he conceptualizes groups or collections of interconnected bodies (e.g. workers in a factory or soldiers in military units), a theme present in interesting ways in Foucault yet rarely remarked upon in the secondary literature with its focus on individual bodies and populations in Foucault.

A third update concerns the supplementing and extending of the work of Foucault. On the one hand this refers to efforts such as those found in Chapter 3's engagement between Foucault and Peck-Brenner-Theodore in which I argue that a number of important supplements from the work of Peck-Brenner-Theodore (such as analyses of policy actors and networks) should be integrated into a Foucauldian framework. These kinds of additions would be beneficial not only for contemporary studies, but they also serve as critiques or recognitions of the limitations of Foucault's own analysis. The supplements identified in this chapter are ones I wish Foucault himself had considered in his work of the emergence, spread, and consolidation of disciplinary power as a hegemonic regime. The second kind of supplement from contemporary scholarship that I think are valuable for a Foucauldian framework is work that has analyzed the impacts of new communication and information technologies on contemporary institutions and systems such as police departments and transportation networks. Chapter 4 on the emergence of what I call 'control programs' and the Real Time Crime Center in New York City is full of such supplements.

Lastly, my Foucault is geographical. While rarely discussed explicitly as the role of space and geography within Foucault (though see Crampton and Elden 2007 for an exception), scholars have frequently commented how power and disciplinary power in particular in Foucault are characterized by the creation of distinct kinds of spaces; with the most frequent references being the assigning of particular locations for each individual within institutions (and the Panopticon serving as the privileged example for this) and Foucault's oft-cited phrase describing the emergence of new regimes of power as happening at

'multiple origins and scattered locations.' But frankly, the geographical dimensions of readings of Foucault are rarely robust. One of the main objectives of this dissertation is to examine and present Foucault as a philosopher with strong sense of the multiple ways that space plays a key role in the emergence and operations of systems of power. In part this objective is achieved through rereading the work of Foucault and paying attention to the terms and descriptions he uses that have spatial significance yet have been overlooked in most interpretations of Foucault; so, for example, the Lexicon in Chapter 1 gathers together a series of concepts (and numerous examples of their use) that Foucault uses to analyze the spatial dynamics of power. The concept of distributions is the most critical, and I disaggregate Foucault's use of the concept into four different processes of distribution: the exclusion and enclosure of populations, the divisions of individuals into cells, the translations of asymmetries of value into spaces of rank, and the construction of multi-scale, multi-locational networks of power. These distinctions and the details of these terms are important for understanding the multi-dimensional function of space within Foucault. In Foucault, the spatial distributions of power play various roles and are indicative of different kinds of organizations.

In addition to these underappreciated terms, this dissertation explores geographies of Foucault in later chapters as well. In Chapter 3, the engagement with Peck-Brenner-Theodore and Foucault is an opportunity to emphasize spatial aspects of Foucault's analysis that have not received sufficient attention as well as make valuable supplements to Foucault from the spatially sophisticated paradigm of Peck-Brenner-Theodore. Their analysis of variegated capitalism—that is, the systematic production of geoinstitutional variation within capitalism—is significant on its own merits, but its use as a lens to reread and supplement Foucault highlights a unique set of geographical dimensions and moments in Foucault as well as geographical concepts or emphases capable of being added to a Foucauldian framework. For example, reading Foucault through a lens of variegation illuminates how Foucault conceptualized the geographical specificity of the emergence of new regimes of power and the multiple spatial and temporal pathways of the diffusion of new techniques; while it also offers supplements such as a focus on the networks of policy actors with distinct geographies to their locations and influence and the geographically

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specific ways in which systems of power are disrupted and forced to evolve along spatially specific path-dependent lines. Lastly, the updates of Foucault in Chapter 4's discussion of control programs include the application of his ideas and supplements from others to analyze the variety of geographical aspects of contemporary systems of power, including the increased focus on managing mobile bodies, the organization of relations of power into distributed networks, the increased use of mapping programs as forms of profiling of individuals, and the enhanced prominence of the spaces and controls associated with questions of access, speed, and risk. From the lexicon to the book reviews that follow each chapter to the final examination of control programs, there is a strong emphasis on the geographies of power, which both reflects and develops that found in Foucault.

Chapter Summaries

Chapter one of this dissertation is a lexicon of thirteen terms from Foucault's genealogical period (here considered as *Discipline and Punish*, *History of Sexuality Vol. I*, and the collection *Power-Knowledge*) that have been underappreciated but hold considerable analytical value not only for creative rereadings of Foucault's work but for contemporary analysis of emergent relations and systems of power. The terms were chosen in part from provocations from other chapters in the dissertation, for example: work on chapter three on 'variegated power' made me return to Foucault with an interest in meta-level organizations (hence 'continuum') and the evolution of systems of power (hence 'experiment'); and the work in chapter two on 'technology and Foucault' provoked me to reconsider the relation between Foucault and Marx (hence 'invest' and 'machine'); and the research on chapter four's 'control programs' raised questions about Foucault's anticipation of contemporary forms of control (hence 'correlative', 'extract', and 'network'). Some of the terms also come from contemporary work by other scholars. The work by Leitner et al. on contestation raised my awareness of how systems of power are challenged and disrupted in ways that are not exactly forms of resistance (hence 'agitation') (Leitner et al. 2007); the work within architecture on new intersections between buildings, spaces, and populations raised questions about relations between spatial organization, control techniques, and organizing groups (hence

'combinatory compositions') (Mayne 2011); and recent discussions around materialism and new ontologies prodded an interest in Foucault's possible contribution to these discussions (hence 'forces' and 'multiplicity'). And lastly, a number of the concepts stem from my strong interest as a geographer in questions of space and time (hence 'distribution' and 'seriation'). The material for each of the terms was collected by copying out large sections of Foucault's publications during this period, searching for all the uses of the term in those selections, bringing them together, and breaking them down into the definition (crafted from all its uses) and key dimensions of the term. I believe each of these terms touches on aspects of his work that are not part of the established 'Foucault consensus' and collectively they contribute to a revitalized and newly relevant reading of Foucault.

The book review accompanying this chapter is on the collection *Michel Foucault Key Concepts* edited by Dianna Taylor. This collection is divided into three main sections on power, freedom, and subjectivity. Each of the essays is split between a first half that provides a basic presentation of a key concept or concepts within Foucault (e.g. 'disciplinary power', 'freedom and bodies', 'practices of the self') and a second half that explores the historical or contemporary relevance of concept(s) (e.g. the utility of Foucault's biopower for understanding eugenics, or his concept of freedom in relation to contemporary feminism). In this review I judge the collection as providing a useful but disappointedly basic presentation of Foucault's main ideas, flawed by an overemphasis on Foucault's weaker later work on ethics, and uneven in the value and insight provided by the relevance sections for each concept. While I recognize that the efforts at arguing for the continuing relevance of Foucault for the present period are important, and a position that I share strongly, I also see this collection as indicative of the predicable ways of reading Foucault, as an example of the 'Foucault consensus'. To make a more compelling case for the continuing relevance of Foucault requires a call to return to and *reread* his work.

The second chapter of this dissertation examines Foucault as a scholar of technology, an aspect of his work that has received surprisingly little attention. This claim may seem odd considering that Foucault is a major influence in fields such as surveillance studies, communications, information sciences, and science and technology studies. Yet Foucault's use in these fields is not as a scholar of technology per se,

but rather as a provider of concepts that help us understand various forms of technology. An example of this is found in the work of scholars who use Foucault's conceptualization of the Panopticon to study contemporary forms of information and database surveillance (Poster 1990; Lyon 2006; Dobson 2007). While there are a scattering of publications on Foucault and technology, with a noticeable increase in recent years in part motivated by the spread of digital information and communication technologies, it is still rare to find scholars who look back into Foucault's texts to examine how Foucault conceptualized the relations between technology and society and the different dimensions of technology itself.

The phrase 'technologies of power' from Foucault is frequently cited in scholarly articles and discussions on his work on disciplinary power. Yet very little substance is ever derived from this phrase; it is treated as a bit of rhetoric, a metaphor on par with Foucault's use of 'physics of power' or 'political anatomy.' This chapter argues that 'technologies of power' is more than a mere metaphor in Foucault. Indeed, considering the frequent use of the phrase or variants of it in Foucault, and considering the key role technology plays in *Discipline and Punish*, both in its narrow artifactual definitions as well as its multi-dimensional (and more Foucauldian) understanding as an ensemble of techniques and practices, it is quite surprising that so little scholarship on Foucault has focused on the features and role of technology within Foucault.

This second chapter begins with an explanation of the motivations behind Foucault's use of 'technologies of power' as a central reference for his understanding of power; in short, a technological understanding of power in Foucault helped him both distinguish his work from alternative schools and scholars (such as humanists and Marxists) who conceptualized power in ways that Foucault thought problematic (e.g. as repressive, or localized in a state apparatus). Foucault's 'technologies of power' was at the same time a sign of the influence of Marx. Foucault's repeated efforts to distinguish his work from Marxism and Marxists have had the unfortunate consequence of obscuring his work's substantial debt to Marx himself. Marx is cited at several critical moments in *Discipline and Punish*, and Marx's work on labor discipline within factories, the importance of temporal regulations for the manipulations of individual bodies and groups of bodies, and the essential role played by machines in the transformations

in modern factories, is a clear predecessor and model for Foucault's own generalization of body manipulations, temporal regulations, and machines as key elements of disciplinary power both within factories and other key institutions. Foucault's analysis of power as a technology signals this influence of Marx, but is also correlated with his identification of several new features of modern systems of power. For him, power becoming a technology indicated a shift towards systems of power that were based on systematic intertwinings of power and knowledge, were operated and judged on a series of technical qualities (immanent, physical, productive, and efficient), and created configurations of power that were both artifactual (embedded in material spaces and dependent on specific objects) and generalizable (detachable as models from particular instances and realizable elsewhere). Far from simply a metaphor, then, Foucault's 'technologies of power' was meant to communicate the distinctiveness of his analysis of modern forms of power as well the distinct elements of its operations.

The second half of this chapter I argue that scholars have missed an important dimension of Foucault's account of technology: I claim that within his *Discipline and Punish*, Foucault lays out an historical evolution towards not only increasingly technological forms of power, but 'machinic' forms of power. I define and trace this 'machinic power' through Foucault's descriptions of the operations of power within modern factories, armies, and the Panopticon. I also draw attention to his account of power transforming of human bodies into machines. For Foucault, disciplinary power was a 'machinery of power.' I finish this chapter by situating Foucault as a unique kind of 'integrationist' within a typology of theorists of technology-society relations outlined by Hofkirchner (2008) and discussing some of the other implications I see for this technology-oriented rereading of Foucault.

The book review that follows chapter three is on Johanna Oksala's *How to Read Foucault*. This book and the *How to Read....* series it is a part of emphasize the value of strategic readings of theorists, a tool-box approach to theory that values provocative readings that push readers to read and use theorists creatively and for their own needs. While I sympathize with some of the spirit of this approach (though tool-box imagery makes theoretical rigor unfortunately come to be seen as something not worth pursuing), I find that Oksala's work does not take up its own challenge to readers; that is, the readings of

Foucault are for the most part textbook presentations of key arguments in Foucault, without much in the way of provocative rereadings or new insights into Foucault. The notable exception to this is Oksala's tying together of Foucault's accounts of resistance, practices of freedom, and his early writings on literature. This is indeed an aspect of Foucault's work not given enough attention, especially considering the emphasis he puts on language. But beyond its basic engagement with Foucault, Oksala's work also suffers from a vaguely Hegelian interpretation of the development of Foucault's thought, an orthodox but flawed presentation of Foucault as a social constructionist, no discussion of Foucault and technology, and a problematic projection of disciplinary forms of power as explanatory of contemporary digital systems of control.

The third chapter of this dissertation examines how rereading Foucault in light of the work done by Jamie Peck, Neil Brenner, and Nik Theodore on variegated capitalism and variegated neoliberalism produces some echoes in and possible supplements for work within a lineage of Foucault. Reading Foucault through the lens of Peck-Brenner-Theodore on variation reveals moments in Foucault missed in standard accounts of his description of power, yet also reveals some possibilities for supplements from the paradigm of Peck-Brenner-Theodore that could be included within a Foucauldian framework to guide improved accounts of what I call 'variegated power', in a gesture towards a larger project of a selective synthesis of Foucault's work on power and Peck-Brenner-Theodore's work on variegation.

This may seem a somewhat strange combination considering that the work of Peck-Brenner-Theodore is so strongly marked by its focus on political economics—capitalism, neoliberalism, and neoliberal urbanism. Yet if one gives their work a slanted and strategic reading, a reading that shades off the political economics of their analysis and leaves in heightened perspective their conceptualization of power, then a framework for studies of power emerges that I would argue is the most substantial and interesting reconceptualization of systems of power since the work of Foucault. By isolating some key principles of power from their work—principles which are clearly evident throughout their texts, but never separated off and articulated as such—and using these principles as guides to reread Foucault reveals and emphasizes aspects of Foucault's account of power too often overlooked or underappreciated.

The five basic principles of power I derive from the work of Peck-Brenner-Theodore are as follows: 'antagonistic embedded emergence' (how systems of power emerge due to opportunities in specific locations and how this context as well as an extended conflict with the previously dominant regime shapes their spatiality and long-term trajectory); 'uneven multi-path diffusion' (how localized techniques spread to new locations through networks of policy actors, along complex spatial and temporal pathways, and have contextualized and complicated impacts on their new locations); 'local institutional polymorphism' (how the same type of institutions operate differently in different locations, because of their different locations); 'mutating meta regimes' (how lower level dynamics interconnect and become 'parameterized' by flexible 'supermodular rule regimes'); and 'path dependent reinvention' (how systems of power evolve within specific contexts due to a fundamental openness, degrees of experimentation, and provocations from contestations and crises). However, in this chapter I only focus on how antagonistic embedded emergence, uneven multi-path diffusion, and path dependent reinvention can help creatively reread and advance Foucault.

Reading Foucault through principles allows for new emphases in the interpretation and appropriation of his work; for example: focusing on the conditions of emergence of new relations of power in particular institutions; the complex spatialities, temporalities, and institutional logics involved in the diffusion of new techniques of power; and the critical role the experimentation, dysfunction, and innovation play in the operation and evolution of systems of power. At the end of each section for each of the three principles, a composite Rule is formulated out of elements from both Foucault's work and the supplements from Peck-Brenner-Theodore. This is modeled on Foucault's own four rules for studying relations of power articulated in *History of Sexuality Vol. I*. These new rules are meant not as replacements, but as additions that modify and extend Foucault's original rules. Reading Foucault on power through the lens of studies of variegation provides a conceptual update to his work and provides an outline for future studies of 'variegated power.'

The book review following this chapter is on the monograph *Foucault* written by Gilles Deleuze. In this abstract, at times suggestive, and yet frequently frustrating reading of Foucault Deleuze reshapes

Foucault's work in light of Deleuze's own work. Deleuze twists Foucault's concepts of forces, power, diagram, knowledge, resistance, and the outside into figures that fit into Deleuze's own ontological model of a fundamental plane of chaos being actualized into the empirical-material world that we experience. Deleuze is famous for such readings; transforming philosophers from Hume, to Spinoza, to Kant, to Nietzsche, to Foucault as predecessors and exemplars of his own position. This ontological translation of the work of Foucault has some interesting elements, including pointing out the often overlooked materialist dimensions of Foucault, connecting Foucault's late work on ethical self-transformation to his earlier work on power, and avoiding the mechanical and predictable readings normally found in the secondary literature on Foucault. Yet, in spite of whatever value provided by these aspects of Deleuze's interpretation of Foucault, what is lost in his ontological translation is considerable: Deleuze's presentation of power as an ontological force marginalizes Foucault's rich analyses of the actual operations of systems of power, Foucault's focus on institutions and specific techniques of power are similarly diminished in Deleuze's reading, the role of technology in Foucault is dismissed in the briefest of terms, an abstract spatiality is substituted for the rich spatial analytics of power found in Foucault, and the forces of resistance are strangely personalized in a manner that renders collective forms of resistance difficult to formulate. At some point Foucault's inventiveness passes a threshold into an unfortunate distortion.

The fourth chapter examines the Real Time Crime Center (RTCC) and Lower Manhattan Security Initiative (LMSI) in New York City and argues that their recent emergence and spread can be examined under the rubric of variegated power and its operational features are indicative of the relative but not total decline of the disciplinary logics analyzed by Foucault and the emergence of a new ensemble of techniques of power that I term 'control programs'. The RTCC and LMSI are twenty-four hour data analytic hubs that coordinate security in lower Manhattan (LMSI) and crime responses and investigations throughout the five boroughs (RTCC). These centers collectively draw upon thousands of closed-circuit television feeds from public and private sources, can access billions of files stored in a series of large local, state, and federal databases, and can conduct sophisticated analysis and mapping of crime data in

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real time. This chapter highlights how the technologies and policies associated with these centers have emerged from transformations in police forces over the last several decades; and it describes the early history, architecture, key technologies, core software programs, and operational impacts of these centers. An argument is made that these centers are not Panopticons; even though a number of scholars have described similar systems or uses of database technologies as new forms of panoptic logics. I argue in this chapter that these centers are not Panopticons for a variety of reasons but most importantly because the basic disciplinary logics of control that undergirded panopticons (hierarchical observation, normalizing judgment, and examinations, as Foucault calls them), have been replaced by another set of logics— control programs—that track, profile, and assess us. These new logics are paralleled in other systems such as medicine, logistics, and marketing are noted. But instead of being completely new, this chapter argues, they embody certain elements of disciplinary systems, elements that shape some aspects of the operations of these newer systems. This chapter seeks to develop an updated version of Foucault for logics of control, while distinguishing which portions of his work are now less relevant or applicable considering the transformative shifts towards digital forms of communication, information analysis, and social control.

The book review following this chapter is on Jeffrey Nealon's *Foucault Beyond Foucault*, which also attempts to decipher what in Foucault is still relevant to contemporary thought, how his work needs to be re-read, and what new connections and supplements are needed for Foucault's continuing relevance for the analysis of present systems of power. Nealon's book is built around a central argument that focuses on the concept of 'intensity' in Foucault's genealogical work. Nealon argues that it is regrettable that this term has been overlooked in secondary work on Foucault, because it provides a key to understanding a central dimension of the argument in *Discipline and Punish*, but also because the concept helps us see the way in which Foucault's work provides a means for analysis of the dramatically different conditions of today. Nealon claims that 'intensity' in Foucault is meant to describe an essential attribute of power to extend, expand, and increase its capacity for control. The disciplines were an intense form of power since they spread throughout social space, integrating individuals, institutions, populations, cities,

and whole countries into networks of economically productive and politically obedient docile bodies. According to Nealon, the transformation in power since 1984 (part of the subtitle of his book) is simply an intensification of the forms of power analyzed by Foucault. Power is not utterly different than it was when Foucault analyzed the disciplines, it has merely taken new, more intensified forms—new, more pervasive, more detailed, more controlling forms of power. This is what Nealon believes Foucault meant by 'biopower' and 'governmentality'. Nealon also argues that this account is compatible with contemporary analyses of finance-dominated neoliberalism. Regrettably, while Nealon's positioning of his project is suggestive (and bears similarities to work done in this dissertation), the execution and product are more vague repetitions and assertions than substantial and rigorous conceptual analysis. His arguments around 'intensity' become so diverse and vague as to lose all meaning; and this updating of Foucault is merely a citation of other theories.

I conclude this dissertation with a short chapter that summarizes the dissertation's main motivations and arguments, discusses what I think is the main significance of the work, and outlines some of my planned future work that will deepen or build upon the work done in this dissertation (including a study of the diffusion of Real Time Crime Centers around the country, a study of the development of contemporary logistics networks, and an analysis of contemporary urban architecture from a Foucauldian perspective).

Chapter 1: A Lexicon of Underappreciated Concepts in Foucault

This chapter presents a strategic selection of thirteen concepts from the work of Foucault that have not received the amount of attention and number of citations devoted to some of his more influential core concepts (such as power, discipline, archaeology, genealogy, docile bodies, biopolitics, and biopower). The criteria for the selection of these concepts primarily consists of their illumination of underappreciated aspects of Foucault's analysis of relations of power as well as testaments to the continuing relevance of his work today for analyses of contemporary cybernetic systems of control. For each term I provide a definition, a discussion of some examples of its use in Foucault, and an explanation of its importance to our understanding of Foucault and his relevance today.

Dictionaries on theorists have proliferated in recent years, with dictionaries on Marx, Lacan, Derrida, Deleuze, Deleuze and Guattari, Zizek, Badiou, and Ranciere among others all appearing in a short time. While these dictionaries are often marketed as effective introductions and overviews of the work of a major theorist (or theorists), there exist a number of other attractions or advantages of the format. These dictionaries are often collections of definitions and descriptions of key terms written by a large number of prominent scholars as well as other major theorists, a collective authorship that both increases the number of interpretive slants and decreases the interpretive bias of the work as a whole. Dictionary entries also include names of key influences and interlocutors, providing an opportunity to trace intellectual lineages, relations with competitors, and allied theoretical projects. In addition, the dictionary format, while sometimes contested as a problematic effort at a definitive collection and semantic determination, actually fits in with a contemporary spirit of 'tool-box' theory—considering different concepts from different thinkers as so many tools to be brought out when analytically needed. That there are today so many such dictionaries is, too, a testament to the large and often difficult output of

many theorists of the postmodern period; dictionaries are not only an effective method of condensing these large corpuses but also a simple and often successful means of capturing the consistency and variation across a theorist's intellectual arc. Finally, the format facilitates making efficient interconnections between concepts, not only those predictably connected within the work of a theorist, but also previously unexpected connections, for example between concepts developed in the early and late periods of an author who seemingly transformed considerably over time.

The recently published *The Cambridge Companion Foucault Lexicon* edited by Leonard Lawlor and John Nale is both a consistent example of this proliferating genre as well as an important addition, as it joins the much weaker *Michel Foucault Key Concepts* edited by Dianna Taylor as the only dictionary style engagements with the work of Foucault (Lawlor 2014; Taylor 2011). The *Cambridge Companion Foucault Lexicon* was written by an "interdisciplinary team of top scholars" that have collectively produced "a reference tool that provides clear and incisive definitions and descriptions" of not only key terms from every period of Foucault's output but also entries on Foucault's primary influences. The collection does not claim to provide the definitive definitions of these terms, but recognizes its contributions as part of an "ongoing discussion" about Foucault as a whole as well as of each of the terms of his thought. Serving as both an introduction and platform for exploring the work of Foucault, the collection includes predictable terms for such an endeavor, for example: abnormal, archaeology, biopolitics, body, confession, control, discipline, discourse, ethics, genealogy, governmentality, knowledge, language, madness, normalization, power, prison, resistance, sex, subjectification, technology, and truth. While these terms are to be expected in a collection on Foucault, a number of terms stand out as creative choices, including: biohistory, contestation, desire, love, multiplicity, nature, and problematization. What is interesting about these terms is that they are actually quite rare in his work (nature and contestation) or are normally not considered central to his thought and thus overlooked or marginalized in secondary literature (desire, love, multiplicity, problematization). It is the inclusion of this last batch of terms, as well as the editors' recognition of an "ongoing discussion" around all of the terms that they chose, that seems most provocative to me; both of these elements of the *Foucault Lexicon*

push toward new readings of Foucault, not merely summaries of or standard introductions to the key dimensions of his thought.

The *Michel Foucault Key Concepts* collection (reviewed following this chapter) also contributes to this effort to push Foucault in new directions. This collection chooses some well-known terms from Foucault—power, power-knowledge, bodies, freedom, resistance, ethics—and while it supplies some fairly basic presentations of these key terms, it does consistently attempt to craft Foucault's analysis as of continuing relevance to the contemporary period. While some of these accounts are flawed (such as a too straightforward projection of 'disciplinary power' into the present), the effort to revitalize the work of Foucault through developing its relevance for contemporary analysis is an important project. The present can help us see Foucault differently; and Foucault can help see the present differently.

The lexicon of key terms compiled in this chapter follows in this spirit. While dictionaries are often used as comprehensive presentations of a subject, they can also be creatively constructed springboards to new methods or directions of thought. Two other dictionaries/lexicons are exemplars of this spirit of creative re-reading and provocations to further developments: Mark Bonta and John Protevi's *Deleuze and Geophilosophy: A Guide and Glossary*; and Susanna Cros's edited collection *The Metapolis Dictionary of Advanced Architecture: City, Technology and Society in the Information Age* (Bonta and Protevi 2004; Cros 2003). Bonta and Protevi's work provides a thorough and elaborate rereading of Deleuze and Guattari through the terms of complexity theory. While developing a suggestive redirection of studies of Deleuze and Guattari, they also ground their work in the texts themselves, producing new insights and new directions for the study of these already much debated theorists. Cros's *Metapolis Dictionary* is also intensely provocative. Drawing together a team of interdisciplinary contributors, as these dictionaries often do, the collection of key terms, definitions, descriptions, cross-references, and drawings seeks to both summarize and propel forward an emerging field of study and practice: a new cybernetic architecture in new cybernetic urban spaces. This work is less focused on providing an 'introduction' or 'comprehensive overview' than in providing an identification and spur to the emerging "global vision" of a "new architectural will."

While both of these collections provide important examples of a 'dictionary with a different purpose', there are two other works on Foucault that have served as inspiration for the present collection. And while neither of them is in dictionary format, both focus on the rereading of central terms in Foucault. The central argument and primary conceptual contribution of Jeffrey Nealon's *Foucault Beyond Foucault: Power and its Intensifications Since 1984* is that the concept of intensity (and intensification) in Foucault has been overlooked in both assessments and applications of his work (Nealon 2008). Nealon identifies key uses of the term in Foucault (particularly in his genealogical period), develops the term in ways that are implicit or simply in the spirit of Foucault's own formulations, uses the term to provide a creative rereading of a number of key moments in Foucault's work on discipline and power, and finally also utilizes the term to update Foucault's work for analysis in the present period. However successful the project is on its own terms, the method and ambition is instructive and provocative. The lexicon in this chapter seeks to echo the intentions and strategy of Nealon's textual returns, twists, and innovations.

Deleuze's spirit of creative reading is an important source of inspiration for the present lexicon and the project of the dissertation as a whole. Yet Deleuze goes too far, in particular because his work on Foucault appears to be more of a twisting of Foucault into a facsimile of Deleuze himself (though the overlaps between their work have not been explored enough). Whereas much of the creative impetus of Deleuze's work is derived from his reading of his own ontological model into the work of Foucault, the present work seeks to ground a rereading of Foucault in the texts of Foucault himself. This is not a narrowly conceived scholarly pursuit of reading Foucault 'correctly' or finding the 'true Foucault'. There is untapped wealth in the work of Foucault, concepts that can help us read him anew and conceptualize power, space, time, groups, dysfunction, and resistance. To see what is there, and to see it differently.

This lexicon was formed in the spirit of construction a new platform for studies indebted to but not merely derivative of Foucault—a platform to continue reading him differently and mobilizing a heterodox heritage in the present. Foucault's work is still relevant in the present not because it is still applicable—or less because it is still applicable—than because it is provocative. The purpose of this lexicon is threefold: (i) to bring attention to terms from Foucault that have been ignored, overlooked, or

not normally associated with him; (ii) to bring together a series of uses of such terms by Foucault in order to cobble together a working definition or framework (the needed creativity of such cobbling is both recognized and embraced—the aim is to craft provocative and useful definitions, not definitive ones); and (iii) to craft such definitions in the context of, and to quickly sketch out within each entry, the relevance and utility of these terms for contemporary theoretical debates and/or analysis of distinctly contemporary phenomenon. To this end, each entry includes several examples of Foucault's use of the term, a creatively composite definition, and a short discussion of the terms contemporary relevance and utility, either theoretical or empirical.

<u>List of Terms</u>

Agitation	Extract
Combinations	Force
Continuum	Invest
Correlations	Multiplicity
Distribution	Network
Ensemble	Seriation
Experiment	

Agitation: Agitations are forces of disruption, dysfunction, or operational difficulty for systems of power.

While not as formulated, directed, or intentional as resistance, agitation in its many forms plays an equally important role in the provoking, improving, and destabilizing of the tactics and strategies of power in Foucault. Littered throughout *Discipline and Punish* is a wealth of examples of power being formed in response to and repeatedly frustrated in its operations by various kinds of agitation: disorder, confusions, inefficiencies, wandering, uselessness, disturbances, inefficiencies, inconveniences, dangers, distractions, irregularities, restlessness, excitedness, and much else besides. Agitations are forces of dysfunction.

Foucault puts particular stress on the role of several kinds of agitation for creating the initial conditions and targets for disciplinary power. For example in the early years of the emergence of disciplinary power, institutions found themselves swelled by "compact, swarming, howling masses" (DP 201). These disordered, confused, useless, agitated multiplicities presented a problem for ill-equipped traditional forms of power and disciplinary controls emerged in part as desperate responses.

Disciplines were also formed in responses to events of upsurges of forces of agitation; for example, a "festival grew up around the plague: suspended laws, lifted prohibitions, the frenzy of passing time, bodies mingling together without respect, individuals unmasked, abandoning their statutory identity" (DP 197). The disciplinary techniques of observation, normalizing judgment, and examination had their roots and first models in the responses to the agitations of the plague.

Circulations of agitated populations also contributed to the emergence of the disciplines. The naval hospital in Rochefort played a key role in the early development and dissemination of the disciplines primarily because of its location at a military port which as teeming with multitudes in states of agitation, a "mobile, swarming ill-defined mass of men," "embarking and disembarking," spreading diseases and epidemics, deserting, smuggling, forming "dangerous mixtures," constructing "forbidden circulations," a swirling "confusion of illegality and evil" that needed to be held, pinned down, dissipated, partitioned, filtered, and treated (DP 144).

Such forces of agitation persisted within disciplined institutions: noise, chatter, copying, and laziness of students; the disorders, distractions, slow downs, and accidents within factories; the contagions in hospitals; the reciprocal influences and plotting within prisons; and the exuberant acts of violence within asylums. In prisons, "the very machinery [of power] transforms the violent, agitated, unreflective convict into a part that plays its role with perfect regularity" (DP 243). Everywhere the disciplined developed a "whole infra-penality" to tamper, tame, and train multitudes "of disorder, agitation, disobedience, bad conduct" (DP 214). The disciplines defined themselves, innovated, and sharpened themselves, in opposition to agitations.

Reconsidering the role of agitations in Foucault varies and enriches the opposition between power and resistance since it adds a large range of types of events and behaviors that are not exactly resistance, but are problems for power. Just thinking about systems of power in terms of an opposition between power and resistance misses all of these types of phenomenon that plague the operations of power, provoke it into changes, and provide it with targets. On the other hand, though this relation is not spelled out in Foucault, these events and behaviors of agitation also create opportunities for resistance; some cases in Foucault, for example his discussions of dysfunctions of organizing factory labor, blur the line between resistance and agitations. For contemporary studies this provides an opportunity to conceptualize a more varied set of forces and events that trouble the smooth functioning of power, including agitations, disruptions, contestations, resistance, and insurgencies. One of the benefits of revitalizing a Foucaultian framework for contemporary studies of power would be a focus on institutional life that would pay needed analytical attention to these various troubles of power.

Combinations: Combinations, or combinatory compositions, are the organization of individual units into groups through an ensemble of techniques that produce a collective social force greater than the simple sum of forces of the combination's constituent units.

The possibilities of the emergence of a combinatory composition are grounded in the "innumerable combinations that result from the multiplicity of objects" (DP 148). The possible

combinations between the forces and elements of a multiplicity are "immense" and "unnumerable" (DP 148). Ensembles of techniques order multiplicities in order to "bind them together in such a way as to multiply and use them" (DP 170). A combinatory composition is not a confused multitude; it is not a uniform mass; and it is not simply the sum of separate elements. A combination in Foucault is a precisely commanded, synergistic composition; a "calculated combination" is "superior to the sum of elementary forces that composed it" (DP 167; DP 162-163).

Combinations are the product of organizing the relations among multiple individuals into an interconnected, composite social force. Any "carefully measured combination of forces requires a precise system of command" (DP 166). In *Discipline and Punish* Foucault lists "combinatory (by the composition of forces)" as the fourth type or characteristic of individuality produced by disciplinary techniques (DP 167). Combinatory compositions are in part the result of the other three types of techniques: the spatial distributions of individual bodies, the coding of their activities, and the temporal decomposition and sequencing of their bodies and activities (seriation). The principal instrument for the recursive articulations of combinatory compositions of individuals is 'tactics'. "Tactics, the art of constructing, with located bodies, coded activities and trained aptitudes, a mechanism in which the product of various forces is increased by their calculated combination are no doubt the highest form of disciplinary practice" (DP 167). Ensembles of instruments, procedures, and techniques divide a multitude into segments, thread them together, and combine them into a composition of increased complexity and production (DP 157-159; DP 164).

Combinatory compositions entail the multi-scale control of individuals and masses, "from the control and exercise of individual bodies to the use of forces specific to the most complex multiplicities" (DP 167). Individual elements are defined by their distribution and seriation—their spatial and temporal regulation—and simultaneously "articulated on others" as a "fragment of mobile space" inserted into a "whole ensemble" which connects, adjusts, and coordinates a combinatory for a particular project (DP 162). Combinations require a differentiation of individuals, their distribution, specific forms of training, reciprocal adjustment and coordination among its members. For example, disciplined soldiers are

operationally connected with other members of their unit, and each unit is coordinated with other units, and these collectives and their relations make possible the organization of the whole armed force "along extended, relatively flexible, mobile lines" of offensive and defensive maneuvers (DP 162). Apparatuses of production (whether schools, workshops, nations, prisons, hospitals, or armies) cross the threshold of disciplinary power when they are capable of forming such productive combinations (DP 218-221).

Reconsidering Foucault's concept of combinatory compositions can help guide reassessments of the role of organizing groups within his *Discipline and Punish*, overcoming a narrow focus on the making of individual docile bodies by much of the secondary literature on Foucault. The disciplines were not just about producing certain kinds of bodies; they were also instruments to create larger compositions within institutional spaces. Foucault's work on groups should be read as often, and read alongside, the work of Freud, Le Bon, and Canetti. Combinatory compositions could also help provide more analytical focus and models for biopolitical studies of managing populations, as these too often focus on the level of the state and its administrative functions while failing to analyze meso-level group dynamics, for example, logistics networks. Contemporary studies of workplaces, armies, and even social networks can explore how social combinations produced in these institutions and systems today have continued, altered, and replaced the tactics of composition analyzed by Foucault.

Continuum: A continuum in Foucault is the interlinking of a set of dispersed and often diverse institutions that may or may not be directly functionally connected or organized into hierarchies, yet utilize a consistent set of techniques of control and draw upon shared systems of knowledge and authority.

For Foucault, a geographically extensive continuum of power is formed through a "principle of relative continuity" (DP 299). A continuum emerges among operationally linked institutions (e.g. orphanage, reformatory, penitentiary, and the army); a continuum exists among institutions that share criteria and mechanisms with similar (but with some degrees of variation) operations, targets, and products; and a continuum coalesces around an interconnected set of authorities (both in terms of

positions of power and as producers of certain forms of knowledge) that craft, implement, review, and diffuse these techniques and mechanisms through institutions and social space.

A continuity of "relatively autonomous and independent" institutions exists in which the operations of specific, 'regional' institutions are linked together, both institutions with different functions as well as institutions operating in different geographical locations (DP 299; DP 302). And "although there is continuity (they are indeed articulated on this form through a whole series of complex mechanisms), there is neither analogy nor homology, but a specificity of mechanism and modality" (DP 26-27). Institutions operate according to the principles of a common system of power, utilize similar techniques, and draw upon shared systems of knowledge. An example of a continuum is disciplinary power, which operated in a diverse set of institutions (prisons, militaries, schools, factories, hospitals) with some functional linkages, consistent techniques, and shared forms of knowledge.

The continuum of interlinked institutions serves as a force of diffusion, transmission, re-enforcement, and responsibility (DP 297). New techniques of power are spread through these institutions, passing between institutions of the same type or between different types of institutions. Collectively, this continuum assumes the responsibility for and assures the operation of a project "a whole society pursues"—an infiltration, orientation, and integration of a society's institutions, mechanisms, and authorities into a shared, consistent, yet diversified model of power (DP 302-303). Modern, larger-scale projects require "continuous regulatory and corrective mechanisms" that operate within an interconnected "continuum of apparatus ... whose functions are for the most part regulatory" (HS 144). A continuum indicates a significant level of functional interconnection or operational similarity among a society's institutions, even amidst (and in fact supportive of) varying degrees of difference in the function of specific institutions and their use of specific techniques.

While Foucault's notion of the continuum stresses the horizontal interconnections among diverse techniques, institutions, and projects, such continuums do not preclude the emergence of hierarchies. Mostly Foucault stresses the differentiation of the continuum according to institutions, mechanisms, and experts as well as the difference between 'compact' and 'diffused' forms of each (those operating in

specific, enclosed institutions and those that have 'swarmed' outside of institutions). A set of "complex, dispersed, but coherent mechanisms" serves as a "material framework" that supports the generalization of a specific functional paradigm through different institutions and social spaces (DP 299). Yet Foucault notes that these continuums interlink multiple scales of control (from the depths of the body to the whole of a society), can become 'subtle, graduated nets' of institutions (with privileged roles of specific institutions and types of institution), and their networks of experts form 'continuous gradations' depending on position, specialty, and competence (DP 26-27, DP 297, DP 299).

One of the specific examples that Foucault analyzes was what he called a "carceral continuum" (DP 297). This continuum was a product of divisions between different institutions and functions blurring through an interconnection of their functioning and purpose. Modes of confinement, punishment, and discipline became more intensely intertwined, and this interconnection fueled the diffusion of each of them in these new ensembles. Disciplines spread through confining institutions; punishments became more detailed and diverse within disciplinary projects; institutional confinement became more effective and more prevalent with the increased use of the new disciplines and punishments—spreading from a feature of spaces on the margins of society towards a feature of its central institutions.

In a rereading of Foucault, continuum is a useful term since it focuses attention on how Foucault thought about the interconnections between institutions and how he conceptualized a society-wide project of power. Continuum provides some specificity for how Foucault thought about the interconnections among geographically dispersed and functionally differentiated institutions. In contrast to Marxist accounts that saw these institutions as part of an apparatus whose function was to reproduce a specific set of class relations, Foucault focuses on a wider range of functional linkages and the sharing of techniques of power and systems of knowledge. Continuum can also help focus attention on the process of diffusion within Foucault (the how, why, and consequences of the spread of techniques) and the consolidation of multi-scale systems of power (two dimensions of Foucault's account that receive relatively little attention). For contemporary studies, the concept of a continuum can be used to explore the possible coalescing of institutions and system around a new regulatory project, one not analyzable as or reducible

to 'neoliberalism' and more specific than 'cybernetic' or 'digital'. An interest in contemporary

continuums can encourage us to examine operational linkages between institutions or systems (e.g. police

and social media), the sharing of specific techniques among different institutions (e.g. police and logistics

networks), and the increased prominence and presence of new forms of knowledge (e.g. computer

programming).

Correlations: Correlations are the imposed relations between two events, objects, actions, and/or

bodies that coordinate their movements and effects in a way that ties them together in an iterative process

of mutual construction and evolution.

Foucault focuses on the existence of correlations in order to avoid causal analyses and yet still

capture the complex relations of mutual constitution, reference, reinforcement, and evolution that exist or

are enforced within systems of power. Which elements are correlated, how they are correlated, and how

strong their correlations are made, are all empirical questions. In part Foucault's own analytical focus on

questions of correlation are a reflection of the evolution of systems of power towards both more detailed

correlations of involving individual bodies and management of correlations among large systems or mass

phenomenon.

The correlation of most importance to Foucault is that between power and knowledge. Arguing

against a strict disjunction between them (as if they were separate or could be absolutely opposed to each

other) or a simple one way casual relation between them, Foucault insists that there exists between them

relations of mutual constitution, reference, and reinforcement. Power and knowledge both produce and

imply one another such that "there is no power relations without the correlative constitution of a field of

knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations"

(DP 28). There exists between power and knowledge "fundamental implications," "processes and

struggles," and "historical transformations" that determine the respective forms and possibilities of each

of them (DP 28). Examples are myriad in the genealogical work of Foucault, but two include: the

constitution of a corpus of knowledge within hospitals both helped construct and was constructed through

the physical and technical design of the hospitals which acted as the "physical counterpart" of the emerging medical discourse (DP 186); and the development of legal discourses of penal justice correlated with the concept of the offender were themselves correlated with the correlative relationship between the penitentiary apparatus and the delinquent (a double correlation that played a pivotal role in the constitution of knowledges and practices of power central to modern prisons and penal systems) (DP 254).

A macro-scale correlative relation critical to the development of the disciplines was the need to manage the conjunctural convergence of large demographic growth and a parallel increase in the apparatuses of production. "The development of the disciplinary methods corresponded to these two processes, or rather, no doubt, to the new need to adjust their correlation" (DP 218-221). New economies of power were needed that replaced traditional forms incapable of adequately dealing the host of dysfunctions, agitations, masses, and possibilities that emerged with these new populations and powers of production. The disciplines organized individuals and populations in ways that decreased the inefficiencies and dangers of these large demographic increases while taking advantage of the new possibilities presented by the new productive apparatus. Power's response to these problems and possibilities emerged as a specific correlation of them.

Foucault also notes the correlation between different techniques of power within ensembles. For example, the writing apparatus developed by disciplinary powers within modern institutions was constructed in order to not only constitute the individual as an analyzable and useful object whose aptitudes and evolution could be known and manipulated, but simultaneously these individualized practices of power helped produce "a comparative system that made possible the measurement of overall phenomena, the description of groups, the characterization of collective facts, the calculation of the gaps between individuals, their distribution in a given 'population'" (DP 190). The operation of these techniques is intertwined with one another, supporting each other, extending their operations in tandem. The comparative fields help shape individualized techniques; and methods of individualization produce more material for comparative projects.

In addition to the large-scale correlation of demographics and economic production, the techniques of disciplinary power also emerged as set of practices to manipulate the body through several different forms of correlation: between the soul and the body, between the body and its gestures, and between the body and specific objects. For Foucault the 'soul' is a "the present correlative of a certain technology of power over the body" (DP 31). That is, it serves as a point of application and production of different forms of knowledge and power that invest the individual body in specific ways and extract useful effects which it can then use again to continue and enhance its hold on the body: the soul is "the machinery by which the power relations give rise to a possible corpus of knowledge, and knowledge extends and reinforces the effects" (DP 31). Two other key forms of correlation within modern disciplinary regimes include the correlation of the body and the gesture and the correlation of the body and the object. For the sake of the most "correct use of the body"—the most efficiency, productivity, and speed—the whole body must be organized as part of an act; "the well-disciplined body forms the operational context of the slightest gesture" (DP 152). Disciplines taught individuals new ways to act, and demanded that the elements of their bodies all be integrated and organized as part of these precise actions. The body-object correlations included such organizations of the actions of the body (the use of legs, arms, hands, fingers, eyes, etc.) but also integrated objects and parts of objects (hammers, rifles, pencils, etc.) in a correlated sequence of steps (DP 152-153). What the object was and how it was to be handled and used informed the actions of the body and the relations among its own elements; and the body and its elements as broken down and organized by the disciplines made new or more efficient uses of the objects possible.

The concept of correlation is connected to a series of important features of Foucault's work. First, particularly in his discussion of the need to correlate the relations between demographics and economic production in early modern Europe, Foucault makes clear his commitment to a conjunctural understanding of historical evolution; that is, there is no linear development (stages of progress) or single driving force (like class warfare), instead there are multiple major phenomenon that emerge and come to be connected in ways that could have been different. The disciplines were not the unfolding of a cosmic force, but the diffusion and eventual consolidation of local responses to new problems. Second, this

demographic-economic problem for power presents relations of power not as the active, shaping force of control and domination, but as a reactive, responsive force that can be overwhelmed and broken down and provoked into alterations of its operations. Third, while it has become academically fashionable to argue that power insists on essentialized identities that enforce homogenization and prevent change or difference, Foucault's analysis of correlations imposed by power shows that systems of power have been utilizing the relationality of bodies and objects as tools and targets for power for some time. Recognizing the relationality of identities is not necessarily subversive. Some other implications for contemporary thought include the continuities and discontinuities between the kinds of correlations Foucault identifies and the shift towards statistical modeling and correlation analysis as a principal tool of contemporary systems of power and knowledge. Also, in discussions of shifts away from disciplinary logics, it could be asked. If the demographic and economic explosion presented the key large-scale problem that propelled the develop of disciplinary technologies, what conjuncture of which trends has presented power with a new set of problems that has led to its transformation into new forms of control such as digital tracking and automated assessments?

Distribution: Distributions are the assignments of elements to particular locations that have been divided and differentiated from each other in order to facilitate analysis and coordination.

Systems of power conduct a "concerted," "calculated," and "strategic distribution of elements" which place specific bodies in specific spaces for an optimum ordering of men and "posts" (DP 218; DP 307; DP 144; HS 142). Along with serial regulations of the rhythms of time, distributions are the second formal method of systems of power. All systems of power are tasked with the "distributive management of its forces" (HS 141). Relations of power impose subtle segmentations in order to transform confused, disordered, agitated spaces and bodies into supervised and organized units and combinatory compositions. While a feature of all systems of power, modern systems of power take these distributions to unprecedented and intensifying levels of detail.

Distributions occur in complex, mixed spaces that are both ideal and real. They are complex spaces because they mix multiple techniques and elements within ensembles of control. These spaces are "at once architectural, functional and hierarchical" in their creation of places, cells, ranks, and networks. Distributions both "provide fixed positions and permit circulation; they carve out individual segments and establish operational links"; they make possible more efficient economies of control (DP 148). The spaces are real since they are integrated into actual projects of power that govern the placement and spatial relations between bodies, objects, rooms, buildings, functions, and points of power. Yet they are ideal since the relations they create and enforce derive from abstract schemas that are in principle detachable from particular instantiations—they are generalizable (DP 205).

According to Foucault, the "spatial ordering of men" is carried out through "tactics", and the disciplinary techniques of power used four kinds (DP 148). First is exclusion and enclosure. A selection process determines which members of a population are included and which excluded. Those that are included are integrated into a "homogenous and well-defined" space that is "heterogeneous to all others and closed in upon itself" (DP 141-142). Armies are enclosed into barracks; workers enclosed into workshops and factories; students enclosed into schools; populations enclosed into towns.

The second set of distributive tactics is partitioning. Partitioning is a rigorous division of spaces into individualized locations and located individualities. Individuals are assigned a place in spaces that have been divided "into as many sections as there are bodies or elements to be distributed" (143). Each individual is placed in their cell. Partitioning distributions are intended to break up, supervise, and control disruptive and agitated collectives, preventing confusion and diffuseness and "dangerous coagulations" through the imposition of precise and solid segmentations, clear orders of presence and absence, specific locations for specific bodies, and easy paths and views for supervisors. Partitioning produces a space for observation and judgment, an "analytical space" (DP 144).

The third and fourth types of distribution are more vertical forms of spatial organization. The third type of spatial distribution is one that facilitates hierarchization of the bodies under its control. It is "an art of rank" (DP 146). Spatial rankings both arrange and represent a series of distinctions among its

elements—the space itself forms a kind of table with various entries marked off by measured intervals and kept under a "scrupulously 'classificatory' eye" (DP 147). These distributions by rank are forms of punishment and reward: a higher or improved rank means less punishment and more rewards; a lower or decreased rank means more punishment and fewer rewards. The analytical space of ranks acts as both rule and tool—both presenting a model to follow and used to enforce conformity to this model (DP 181-182). In relation to this model and its rules, the distribution into ranked spaces both homogenizes and differentiates its population. Rank is a "differential distribution" (DP 200).

The fourth and final distribution (and second vertical tactic) is the concerted formation of groups into hierarchical, pyramidal networks. This form of distribution is treated separately later in this lexicon.

An appreciation of the various forms of distribution in Foucault reveals the multiple dimensions of his analysis of spatial controls. This is actually a rich set of concepts and descriptions in Foucault that detail how spatial arrangements play a critical role in the construction, maintenance, and evolution of power relations. Foucault is among the great geographers of power. Foucault's spatialization and materialization of Nietzsche's more social status notion of rank has also not been appreciated properly. For contemporary use, the concept of distributions can be utilized to explore the new forms of exclusion (including the digital divide and other 'dark undersides' to the 'age of access'), the increased prominence of controls of movement in wider spaces (not the elimination of enclosure, but a marked increase in the importance of channeled movements and controls of mobile bodies), and the ubiquitous spread of automated forms of spatial partitioning (e.g. Fast-Trak lanes) and rankings (e.g. credit reports). Despite some work in this direction, Foucault holds considerable untapped potential for urban studies, and his analysis of distributions should be a central feature of such studies.

Ensemble: An ensemble is a collection of interoperable yet diverse techniques of power aimed at coordinating (investing, partitioning, seriating) various elements of a multiplicity into a combinatory composition of intensified production.

Ensembles of "compulsory alignments" allow for the ordering of a given multiplicity (DP 147; DP 149). Ensembles are "anonymous instruments of power" used to "regiment" the "very texture of a multiplicity", organizing its distinct and diverse elements and their relations into a "multi-segmentary machine" (DP 218; DP 164). The organization into a multi-segmentary machine enhances the productivity of a multiplicity. Ensembles are the means of organizing emergent powers.

The "technological ensemble" both "forms and fragments the object to which it applies its instruments" (DP 255). Segments that have been functionally reduced and "trained to function part by part for particular operations" are interconnected through ensembles to "form an element in a mechanism of another level" (DP 164). Within the ensemble, each of the techniques ordering the elements become mutually referential and functional—"[e]ach makes the other possible and necessary; each provides a model for the other" (DP 220-221). The interconnections of tactical techniques into a "vast, coherent" ensemble can be treated as an "operational schema" or "unitary technique" (PK 195; DP 221). The effect of the "projection" of this unitary technique is that "the individual forces that they bring together are composed into a whole and therefore increased" (DP 221). Through an ensemble of technical inventions, a sum becomes greater than its parts.

The paradigmatic examples of these ensembles in Foucault are (a) the enhanced productivity of multiplicities within factories due to the coordinated articulation of technological mutations, new divisions of labor, and disciplinary techniques (DP 218-221); and (b) the technological inventions, tactical innovations, and new disciplinary techniques within early modern armies (DP 164).

Some of the contemporary conceptual utility of the term is in critically assessing many of the laudatory discourses around synergy, agglomeration, emergence, and complexity. In addition, the term is helpful in directing analytical attention towards the diversity and flexibility of digital technologies of control; these technologies often open up multiple ways to condition, interlink, and coordinate individuals. Ensembles of techniques are more important and pervasive than ever. Digital technologies have increased the number of technical interventions, multiplied their possible combinations, and diversified the types of regimented multiplicities. This makes it all the more important to disaggregate

analytical terms meant to capture these changes, making sure to develop the details and diversity within terms such as simulations, networks, and modulations.

Experiment: Disciplinary power was an experimental practice—it emerged as a set of localized innovations to new or growing problems, constantly experimented with new techniques to improve its operations, and was propelled both by the experimental spirit of the human sciences and bourgeois inventiveness, both of which it was closely integrated.

Within Foucault's own texts as well as the secondary readings of his work, the perceived pervasiveness and dominance of power (especially in its disciplinary forms) hides the importance of experimentation and innovation within systems of power (modern forms of power in particular) as conceptualized by Foucault. Power experiments; it innovates, it invents new tactics and techniques.

Disciplinary projects of power emerged as experimental responses to complex, changing conditions that taxed traditional forms of power and presented new problems. The disciplines emerged as an "ensemble of minute technical inventions," an "invention of new methods and mechanisms in response to particular needs" (DP 218, 139). For example, the naval hospital Rochefort, an early developer of disciplinary methods, that "served both experiment and model" dealing with a host of agitations and threats stemming from its function as a hospital, its location at a busy port, and its mission to service a military population; Rochefort needed to invent new techniques to handle the swarming masses, the circulation, embarking, diseases, smuggling, contagion, dangerous mixtures in a "meeting place for forbidden circulations" (DP 144). In response, Rochefort developed new methods of supervision, distribution, and classification of patients that provided analytical filters for the flowing masses, superior holds over individual bodies, more efficient uses of medical resources, and more effective monitoring of diseases and treatments.

Part of the experimental spirit of modern power is derived from its constitutive alliance with the modern, empirical, experimental sciences (DP 225). According to Foucault, the examination, the central technique in disciplinary regimes, take the "form of the experiment" (DP 184); indeed, the disciplines'

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manipulations of the body drew upon and contributed to "to a whole series of researches, theoretical or practical, into the natural machinery of bodies; ... they began to discover in them specific processes; behavior and its organized requirements gradually replaced the simple physics of movement" (DP 156).

The Panopticon itself—the definitive space for disciplinary power—Foucault describes as "a laboratory of power," "a machine to carry out experiments," " a privileged place for experiments on men" (DP 203-204). A series of institutions employed panoptic design and principles as part of an experimental ethos, for example: experiments with medicines and treatments in hospitals; experiments with different punishments of criminals in prison; experiments in teaching techniques with students in schools; and experiments with men-machine relations within factories. As much defined by their efficiency and detail, disciplinary power depended on discoveries and inventions. Power is an experimental practice.

Lastly, Foucault notes that the inventiveness of modern forms of power is both a condition and indication of the bourgeois 'genius': it constructs machines of power that not only extract useful effects, but effects that can be reinvested in new expansions and innovations of its power. "[T]he power of the bourgeoisie is self-amplifying, in a mode not of conservation but of successive transformations. ... Hence both its precariousness and its supple inventiveness. Hence the fact, the possibility, of its fall and of the revolution has been integral to its history almost from the beginning" (PK 160-161).

An appreciation of the role of experimentation and innovation within disciplinary forms of power would improve secondary readings of Foucault since it would provide such accounts with a stronger emphasis on the flexibility, evolution, and fragility of disciplinary power (and power generally in Foucault). This innovative dimension of the disciplines is especially strongly marked early in the emergence of the disciplines, a moment that receives little analytical attention in the secondary literature. Also, the disciplines are frequently presented as a series of established techniques that have spread throughout society seemingly intact and consistent from institution to institution and place to place. But their experimentalism also implies a divergence of their forms in particular locations and institutions; it also implies an evolution of their operations over time. Lastly, this experimentalism also indicates a certain level of dysfunction, imperfection, practice of 'testing', of trial and error, and risk in the operation

of the disciplines not frequently accounted for. In terms of contemporary relevance, it would be intriguing to study: the probably experimental origins of forms of power dominant today; the impact of digital technologies on the experimentalism of specific agents, institutions, or systems (with possible decreased costs and increased ease of conducting small scale experiments with precise feedback and scaleable results); and how contemporary forms of experimentalism have been offloaded to individuals as part of user-generated content or made possible by improved cybernetic controls, leading to more 'planned flexibilities' and shifting subjectivities. The basic message, and a powerful one, is that power is not static, but rather, as Foucault himself puts it, a "matrices of transformations" (HS 99).

Extract: Tactics of power in positive economies extract useful effects from the distribution and seriation of subjected bodies and combined multitudes.

The strategies of extraction replaced the levying of the feudal and monarchical powers, the "levying on money or product by royal, seigniorial, ecclesiastical taxation; levying on men or time by corvées of press-ganging, by locking up or banishing vagabonds" (DP 218-221). The process of extraction assures the operation of a "positive economy" that rather than operating on principles of negation, elimination, or avoidance, seeks to produce, enhance, and accumulate ever more useful effects (DP 154). Extraction is not a deduction; it is integrated into the productive apparatuses of power from within, as part of their operation. "Hence, in order to extract from bodies the maximum time and force, the use of those overall methods known as time-tables, collective training, exercises, total and detailed surveillance" (DP 218-221). Extractions are part of a continuously exercised economy of power which "presupposes a tightly knit grid of material coercions", ensembles of techniques that directly articulate power onto bodies or collections of bodies (DP 192, PK 104). The useful effects produced include forces (such as those of labor within factories), knowledge (such as a pupil in an examination), and time (such as troops during military movements) (PK 104; HS 59; DP 157). Extraction is not depletion; it is

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simultaneously optimizing and expansionary. On the one hand, extraction tends "towards an ideal point" at which one achieves maximum or optimum speed and efficiency—an ideal acceleration at minimal cost (DP 154); for example, the speeding up of troop movements (both at the level of the individual and the unit) and the speeding up of production within factories. In the disciplinary tactics of European militaries Foucault identified how the "time of each [soldier] must be adjusted to the time of the others in such a way that the maximum quantity of forces may be extracted from each and combined with the optimum result" (DP 165). On the other hand, even while pressing towards this ideal optimum, extraction is in principle "inexhaustible", seeking to make the individuals and combinations "ever more available" and "ever more useful" (DP 154). From the perspective of extractive powers, "there is not a single moment of life from which one cannot extract forces, providing one knows how to differentiate it and combine it with others" (DP 165). Systems of extraction are insatiable, in principle evolving towards levels of subjection that never reach a limit—ever more production of forces, knowledge, and time extracted to be reinvested for future expansion and improved efficiency (DP 162).

In a reconsideration of Foucault this concept of 'extraction' is useful for exploring the many purposes and projects which systems of power are capable of pursuing. This could move readings of Foucault beyond simply focusing on power or disciplinary power as the production of docile bodies, as such production is always in the service of some project, for the purpose of producing some particular useful effect. The concept of extraction also helps explore connections between Foucault and Marx (for example, the micro-economies of production, the multiple 'products' of production, and the expansionary nature of modern systems of power). The value of 'extraction' for contemporary studies is that with the emergence of digital information systems there has been a considerable expansion and diversification of the methods and products extracted from individuals and combinations. Mobile technologies in particular have amplified the investments of power and the extraction of multiple kinds of information from workers, consumers, and citizens. The increasing importance of information production—as a 'useful effect' that is considered inexhaustible and non-depletive—indicates both important continuities and innovations in contemporary forms of power relative to disciplinary regimes.

Forces: Forces are basic, ubiquitous social energy that is inherently dynamic, relational, productive, and disorganized, yet capable of being organized and enhanced.

It is helpful to think of Foucault's focus on forces in contrast to paradigms that employ a methodological individualism that assumes individuals as the basic units of analysis, the primary actors whose decisions and action are the base upon which larger systems are built. For Foucault, such a basic unit is not the individual but the "manifold relationships of force," "a multiple and mobile field of force relations," which always remains "unbalanced, heterogeneous, unstable, and tense" (HS 95; HS 102; HS 93). At its base, society is made up of a "moving substrate of force relations" (HS 92). There is a multiplicity of force relations immanent in every sphere and situation. Seeing forces as fundamental is the correlative of a analyzing power as productive. In a transition from traditional forms of power based upon deduction, limitation, and elimination, the disciplines and the panopticisms were answers to a new question for power: "How will power, by increasing its forces, be able to increase those of society instead of confiscating them or impeding them?" (DP 208).

The focus of disciplinary power is often presented by Foucault as the production and regulation of docile (analyzable and useable) bodies; yet for Foucault, forces are more fundamental than bodies. Power must counter the irregular, the adverse, the disjunctive, the contradictory, the dysfunctional, and the agitated forces that result in the disobedience, inefficiency, and possible 'political' effects of bodies (DP 221; DP 218; HS 92-93). Bodies are made of forces; and power seeks to organize and enhance these forces. 'In themselves', such forces are productive but irregular, disobedient, adverse, unpredictable, wandering, nomadic, anarchic, undisciplined. The "heterogeneous forces" of "irregular bodies" must be invested and shaped; the forces of the body are patterned in their interactions according to specific routines and exercises, specific positions, movements, and sequences (DP 208).

Disciplines were a type of organization and amplification of forces. The disciplines sought the "maximum extraction of force" from bodies (DP 203). Disciplinary power regulated the relations of time, bodies and forces for the sake "an ever more detailed arrangement" that could extract "ever more useful

forces" (DP 154; DP 157). A body was invested for the sake of the "constant subjection of its forces" (DP 137). Foucault describes how the agenda of the disciplines was the enhancement of the economic forces of the body and a reduction of the political forces of the same body (DP 137-138). On the one hand, disciplines were oriented to simultaneously order forces while also further generating and expanding them; on the other hand, disciplines aimed to reduce disruptive forces, diminish forces of agitation, and regiment adverse multiplicities. Power both increased the capacities of bodies and kept them in a "relation of strict subjection" which reversed the courses of its energy (DP 137-138). As power enhances the forces of the body, it becomes more effective in its control, able to extract more useful effects, able to optimize the forces under its control, and expand its hold over bodies (DP 208). Behind and beneath all the great abstractions of a society—e.g. market, state, law—"there continues the meticulous, concrete training of useful forces" (DP 217).

While disciplinary power focused on the forces of the body, it also aimed to integrate these bodies and their forces into larger combinations of bodies and synergistic increases of their forces. The "product of the various forces is increased by their calculated combination" (DP 167). The work of Marx is the key template here for Foucault. Foucault cites Marx on work in factories: "the mechanical forces exerted by an isolated workman differs from the social force that is developed, when many hands take part simultaneously in one and same undivided operation" (DP 164). Combinatory compositions are made through the carefully measured, calculated, and commanded concentration and composition of forces into "social forces" of production whose production potential exceeds the sum of the elementary forces that serve as its constituent units (DP 165-167). For Foucault, all institutions are engaged in projects that involve the constitution of such social forces.

Greater attention to forces within Foucault's work would bring out more strongly the 'minimal materialism' that operates within his analyses. This offers both a connection and contrast to contemporary materialist discussions, as these discussions emphasize the importance of materialism yet tend to reduce the concepts and stakes of every discussion to their materialist dimension. Foucault's materialism serves as an important ground and reference, but its utility is ultimately to better sharpen and focus his analysis

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on historical specificity and evolution of socio-technical systems of power. A focus on forces in Foucault also reveals added layers to his analysis of resistance, agitation, and dysfunction. Too often 'Foucault on resistance' is merely reduced to when he explicitly uses the term resistance. How he discusses 'forces' expands on this considerably. Lastly, along with the connected concept of combinatory compositions, his analysis of social forces reveals a Foucault not just interested in individual bodies and large populations, but a meso-scale organization of groups.

Invest: Techniques of power invest objects through direct articulations at their elementary level in order to turn them into means of production and communication that can be enhanced.

Power relations that invest their objects gain a "meticulous" and "concrete" form of "grip" on them, exerting an "insistent" and "persistent" pressure "in depth" while also consistently "increasing its own points of contact" with the object under its control (DP 217; DP 206-207). Considering the exercise of power relations as types of investment means "one abandons ... the violence-ideology opposition, the metaphor of property, the model of the contract or of conquest" as well as models of knowledge based on an interested versus disinterested opposition or a primacy of a knowing subject (DP 28). Investments are not violent; they are integrations of the imperatives of power into the constitution and functioning of the basic elements or forces under control. Investing in depth means, in the case of bodies, "not simply at the level of consciousness, of representations ... but at the level of what makes [them] possible"; or, in investments of duration, extending a hold down to the level of smaller and smaller moments of time (DP 185; DP 160). These elementary interventions are "not added from the outside" but instead assure control and guarantee use in a direct but subtle articulation of "detailed control and regular intervention" (DP 160).

Individuals participate in the investment of their bodies by power; they internalize the normative codes of power, ordering their own bodies according to the distributions, series, and correlations demanded of them in specific spaces and projects. The Panopticon's persistent visibility of its subject, and consequently the subject's own articulation of power through his bodily routines, is the clearest example

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in Foucault of a dynamic he considers as generalized throughout disciplinary institutions (DP 202-203). When we are integrated into a Panoptic machine, we are "invested by its effects of power which we bring to ourselves since we are part of its mechanism" (DP 217).

Investments seek to make their objects more productive and communicative. Bodies, objects, elements, and forces are integrated into procedures of power and optimized for the purposes of a production that can be extracted, accumulated, and used as a tool for reinvestment (that is, more detailed, more efficient, or more productive future operations). Simultaneously, investments integrate entities or forces into "circuits of communication," relays and routes of power, so that power "is transmitted by them and through them," extending and distributing its operation (DP 217; DP 28). Systems of power form series of series, combinations, networks, and continuums, all of which depend upon forms of communication among their constituent elements.

Formalized investments have "a conditioning-conditioned relationship to a kind of meta-power" (PK 122). That is, the investments of power networks serve as a base of support for more abstract and superstructural formations, which react back on and help structure, stabilize, and disseminate specific types of investments. This happens at the level of large institutions (such as the police, army, and the state) and systems (such as the market).

These investments, however, are susceptible to destabilization through "the effects of resistance and counterinvestments," or can find themselves "exposed to a counterattack in that same body" (HS 97; PK 56). Resistance and agitation mean that investments are being disrupted (strike at a factory) or alternative investments are being made—"a different economy of bodies and pleasures" (HS 159). While capable of codifying into large-scale mobilizations of resistance, such counterinvestments are also provocations for power to shift strategies, evolve, and improve its methods and grips.

The contemporary relevance of the concept of investments can be seen in how contemporary forms of power have become even more elementary (with investments at the level of biology, information, and time all becoming more micrological) and with a proliferation of points of contact (with the growing pervasiveness of machinic interfaces and informatic controls). Foucault's 'investment' also

helps us analyze the relations between the circuits of communication and production, in particular the role of bodies in the production of information (for example, the bodily mechanics of cell phone usage). Foucault's disciplinary investments can be seen as important precursors for today's cybernetic controls, decreasing the sense of a sharp discontinuity between the disciplines and current techniques of power.

Multiplicity: Multiplicities are the collections of bodies and forces organized by power. Considering these collections as multiplicities is meant to emphasize four aspects: (i) these bodies and forces are constituted and evolve through their relations with each other; (ii) there is in principle countless potential relations among them; (iii) they are capable of being ordered by power (with specific relations selected, enforced, and enhanced); and (iv) these relational collections of bodies and forces remain to varying degrees agitated and resistant to the impositions of power.

Multiplicities present problems and possibilities for power. At its core power is the set of "techniques for assuring the ordering of ... multiplicities. It is true that there is nothing exceptional or even characteristic in this; every systems of power is presented with the same problem" (DP 218). The forces and bodies that make up the basic elements of power in Foucault are fundamentally relational—they are constituted through their relations to one another and these relations are in principle capable of "innumerable combinations" (DP 148). A multiplicity is a "merging" mass of diverse elements that collectively exists as "a locus of multiple exchanges" (DP 201). Multiplicities in Foucault are full of potential. Yet absent effective mechanisms of control, multiplicities present a problem to power of how to organize their inefficient, confused, useless, wandering, unpredictable, inefficient, mobile, swarming, and dangerous dynamics (DP 148; DP 218; DP 144). Relations of power struggle to impose "a task or a particular form of behavior" on a multiplicity (DP 205).

Yet multiplicities can be regimented. Ensembles of techniques of power seek to craft and channel the potentially innumerable connections of an unorganized multiplicity into the "calculated combinations" and "strategic distributions" of "ordered multiplicities" (DP 167; DP 307; DP 148). The inefficient, confused, and unpredictable exchanges and mergings of a "given multiplicity" are "abolished and

replaced" by a "calculated multiplicity" that has been analyzed, quantified, supervised, and trained (DP 2170; DP 201). Power operates "inside the very texture of the multiplicity," breaking down a multiplicity into its elements and articulating specific relations between them with an aim "to derive the maximum advantages and neutralize the inconveniences" (DP 142). The regimentation of a multiplicity can enhance its productivity. A multiplicity becomes, through these relations of power, more "complex" and "more useful than the simple sum of its elements" (DP 167; DP 218-221). Multiplicities organized by relations of power can become combinatory compositions.

Foucault argued that "the peculiarity of the disciplines is that they try to define in relation to the multiplicities a tactics of power that fulfills three criteria": exercise of power at the lowest possible economic and political cost; the maximization of intensity and extensiveness of these particular relations; and the coordination of disciplinary techniques with the projects of production in key institutions (DP 218). One of the most important institutions was the prison. Bentham's design of a Panopticon was both an indication of and contributor to the development of these disciplinary ensembles through which the relatively unorganized multiplicities previously found in places of confinement—"the compact, swarming, howling masses"—were "replaced by a multiplicity than can be numbered and supervised" (DP 201). These disciplinary forms of supervision and calculation were also used in militaries, factories, schools, and hospitals to organize their multiplicities into docile bodies, productive social forces, and new forms of knowledge (DP 201).

Yet multiplicities always retain within their relations a fundamental force of counter-power, an "intrinsic, adverse force of multiplicity" that can "counter the grips of power ... in their multiplicity and their possibility of resistance" (HS 157). There is, then, not only a possibility of a "multiplicity of points of resistance", but a fundamental aspect of agitation and resistance within a multiplicity (HS 95). A multiplicity "can be coded—in part but never totally" (HS 93). This is the primary reason that all relations of power are fundamentally "unbalanced, heterogeneous, unstable and tense force relations" (HS 93).

For readings of Foucault the concept of multiplicity (along with "forces") points towards what could be called a minimal materialism in his work that draws some parallels to new materialism

discussions today and gives some credence to the ontological reading conducted of his work by Deleuze (though Deleuze pushes this reading too far). The concept of multiplicity also adds to the moments in Foucault where he conceptualizes the forces of resistance, agitation, and limits to techniques of power—pushing back against readings of his work that depict it as arguing for a totalizing form of power. Multiplicities also provide some points in Foucault from which to consider his sparse but significant comments on how groups are capable of resisting or undermining power (much of Foucault and the secondary literature emphasizes personal forms of opposition). Lastly, Foucault's discussion of multiplicities also highlights some of his thoughts on how power must organize moving masses; not organize masses so that they can move (which he also analyzes and which has been frequently commented on), but how certain populations moving in certain ways or in certain spaces are perceived as problems or threats to power and must be organized. Some of these moments in his text could be read as an anticipation of contemporary mobility studies. Foucault's notion of multiplicities could also be used today to consider how power has organized new types of multiplicities; indeed, some contemporary forms of power can be read as efforts not to limit multiplicities to certain relations, but to seek to profit from enhancing a multiplicities' possibilities of creating new relations. The relational turn in much contemporary thought might be read (cynically) as the often naïve mirror of systems of power becoming more interested in such relations.

Network: Networks in Foucault are heterogeneous elements brought into relation in such way that they become co-producers of each other in a chain of continuous connections; the network is not a static distribution but a set of productive relations that are hierarchical, dynamic (it is expansionary and evolves over time), and provisional (they ultimately break down).

Networks are organizations of "diverse elements" that are interconnected through a "whole series of multiple and indefinite power relations" (DP 302; PK 122). The power relations between these elements constitute the network, as a general line of force emerges that links elements together and thus "traverses and produces ... a productive network" (PK 119). These networks are not fixed or static

structures; networks ceaselessly recreate relations, distributions, and circulations among the elements; networks are "constantly in tension, in activity" (DP 26-27). The relations do not weigh down the operations of the elements that have been integrated; rather, the linkages in a network stimulate, incite, strengthen, and form each of the elements (HS 106). The integration of an element into the functioning of the network "increases its possible effects" (DP 173).

Foucault also repeatedly notes that these networks form hierarchical relations. While relations of connection and mutual production traverse the entire network and many of these relations operate "laterally," networks also operate "top to bottom," forming a sometimes long and sometimes compact "hierarchical network," a "continuous ... pyramid" (DP 214; DP 219-220). Networks serve a "complex function" in linking together multiple scales of organization (DP 214-215). But any hierarchy also has relations that run from "bottom to top," as lower levels have a "conditioning-conditioned relationship to a kind of meta-power" (PK 122). The apex of any network depends on lower levels for its own operation; lower scales of a networked hierarchy condition the operations of higher-scales or more privileged points of power. Yet these privileged apexes still have a disproportionate share of the power to determine the relations, functions, and evolutionary directions of the network.

Some networks seek to expand, to grow more extensive, dense, and continuous. They want to run "through society without interruption in space or in time" (DP 208-209). They want to "cover an ever larger surface" (DP 209). They want to form a "dense web that passes through apparatuses and institutions" and become "co-extensive with the social body" while leaving "no spaces of primal liberty between the meshes of the network" (PK 141).

Yet all networks finally break down. Every network is an "historical construct" (HS 106) and thus not only capable of evolving but also destined to break apart or transform beyond its provisional identity. In part this is because there are a "multiplicity of points of resistance ... present everywhere in the power network" that provoke and threaten the stability of these networks (HS 95); and partly too it is because such networks inevitably become dysfunctional, like traditional forms of power confronting the chaos of

demographic spikes and new machines, these networks become "irregular," "inadequate," "conflicting," and "costly"; they are ultimately broken up and replaced (DP 218).

Foucault discusses a broad range of examples of network organizations including comparative fields, military encampments, and the police. When discussing the disciplinary method of ranking individuals, Foucault notes that this situating of individuals within a particular location that is both reflective of and contributes to comparisons, also distributes and circulates these individuals within a network of relations, as the performance of an individual and the system's judgments of them affects the order of the entire field (DP 145-146). Networks are full of such precisely designed ripples of effects.

Foucault also describes the shift from traditional two square plans towards spatial organizations modeled on the networks of order and surveillance in military encampments (DP 171-172). These military camps laid down a geometry of locations and relations between entrances, rows, tents, units, individual soldiers, and supervisors that became a diagram of power employed in a variety of other institutions (including hospitals, schools, prisons, cities, etc.). Lastly, Foucault analyzes the eighteenth-century police force as a critically important network in the constitution and diffusion of new forms of power. This police force was a "complex function" that integrated both the higher scales of monarchical power with the lower levels of discipline and control within local institutions. Between these "it extended an intermediary network" that "filled in the gaps, linked them together, guaranteed with its armed force an interstitial discipline and a meta-discipline" (DP 214-215).

An important value of networks in readings of Foucault is how it indicates multi-scale systems, both in terms of geographical scales as well as levels of power. Foucault's accounts of disciplinary power are often read by commentators (and seemingly presented by Foucault) as isolated spaces of confinement and control; the concept of networks shows that there are important interrelationships between institutions and between institutions at different scales. Networks in Foucault also draws attention to multiple levels or scales of power within an organization—an important point that appears to contrast with but really supplements Foucault's focus on a single-level asymmetry of power (e.g. teachers disciplining students). Rereading Foucault on networks can contribute to contemporary studies of power by: emphasizing that

networks and hierarchies are not necessarily in opposition or mutually exclusive (with a preponderance of current work associating networks with horizontality); dispelling notions that the current age's networks have emerged suddenly to replace hierarchies (e.g., corporate hierarchies supposedly becoming more networked and thus less hierarchical), especially since networks are not new; and exploring how the new networks have emerged to occupy the decisive place once occupied by the police (e.g., the networks of logistics perhaps).

Seriation: Seriation refers to the multiple methods through which time and actions are correlated and sequenced.

Seriation is how power is "articulated directly onto time" (DP 160). The "investment of duration by power"—the "detailed control and regular intervention ... in each moment"—orders a "'seriation' of successive activities" (DP 160). Duration is divided into successive segments with clear breaks; these segments (stages, levels) are combined and adjusted in relation to each other within an analytical plan (DP 157-159). In addition to the distributions of space, systems of power also entail economies or "rhythmics of time" with temporal imperatives and regulations (DP 149; DP 151). In this way, the productivity of power is divided up, articulated across its elements, and enhanced. A series of successive stages is defined. "Multiple and progressive series" are integrated into a "polyphony of exercises" (DP 159). This happens at the level of the individual and combinatory compositions.

At the level of the individual, particular bodies are situated within a sequence of actions that build upon each other or within a hierarchical set of stages that an individual must move through; the particular sequence of actions is determined by the particular stage of the subject, his position in the "genetic sequence in which he finds himself" (DP 165). In terms of a sequence of actions, two key examples are the correlation of the body and the gesture and the correlation of the body and the object. In the correlation of the body and the gesture, disciplinary controls impose a series of gestures which enforce the 'correct' use of time—a disciplined body performs efficient gestures (DP 152). For the correlation of the body and object, an action is broken down into two parallel series that outline the movement of the body

(hands, wrists, arms, etc.) and the movements of the object (pencil, rifle, lever) in a strict, efficient, parallel succession.

Individuals are also serialized within a comparative space. For example, the organization of serial space within schools was a "great technical mutation" that organized a "new economy of time of apprenticeship" in which the space of the classroom defined a series of intervals and compartments that made clear a student's progress through subjects and levels of difficulty (DP 147). Serializations are an "ensemble of compulsory alignments" that make possible a "perpetual movement in which individuals replace one another in a space marked off by aligned intervals" (DP 147). This serial, cumulative sequencing makes an individual an "evolutive segment" in a "'dynamics' of continuous evolutions" (DP 160-161).

The seriation of individuals is also articulated with the seriation of others in a "series of series" (DP 159). The "various chronological series" are combined and adjusted to each other to form "a collective and obligatory rhythm" (DP 151). For example, in workshops the locations of each of the workers is placed in a series of positions that not only make possible comparisons between the workers, but allow for the supervision of the successive phases of the production process; the process itself is broken down into its elementary operations and each individual is positioned, exercised, and overseen in relation to a whole series of individual bodies in movement.

For readings of Foucault, the concept of seriation or series provides insight into Foucault as a thinker of time. Echoing but generalizing the work of Marx on time discipline within factories, Foucault analyzes the ways in which the temporal experience of subjects is manipulated as part of technologies of power. The very close relation between temporal series and spatial distributions in Foucault calls attention to the need to analyze the dynamic interrelationships between controls of time and space—they are constituted and evolve together. Spatial distributions also help create temporal rhythms, and vice versa. For contemporary studies, seriation is useful for considering how the temporalities of control have been transformed due to new digital technologies. The use of sophisticated machines within workplaces has perhaps continued the breakdown of time into even smaller segments of analysis, more precise sequences

of action. New mobile technologies require a host of sequences to interact with them; providing both more options and flexibility compared to disciplinary controls, but multiplying the points of contact and frequency of these sequences (i.e. checking email). Concepts such as seriation should also be considered useful for studies of contemporary transportation systems (including logistics) and how they regulate the large-scale or spatially dispersed temporal rhythms of interconnected compositions of subjects.

Book Review: Foucault's Key Concepts, edited by Dianna Taylor, Acumen 2011

In her editor's introduction to *Foucault's Key Concepts* Dianna Taylor remarks that while "Foucault may offer us some 'tools', we must figure out the use to which we will put those tools" (8). This toolbox metaphor is fairly common within secondary scholarship on Foucault. It presents Foucault as a non-systematic thinker, pragmatic, strategic, interested in craft, and responding to specific problems; and it presents his readers as able to turn to Foucault to find what works for them, what concept or argument they find useful for their own analysis, and free to take what they need and leave the rest. Readers of Foucault can be as unsystematic and strategic as Foucault. At times, especially in interviews, Foucault encouraged such a style of engagement with his work and with philosophy in general.

While I do not find myself opposed in principle to this toolbox spirit, I am often disappointed with its results. Some of the limitations of this type of engagement with Foucault include: a static understanding of his main concepts (as if we could not reread them creatively and differently), a reiteration of the same basic set of concepts (instead of the exploration of other concepts and avenues through the rich and varied work of a scholar like Foucault), and a mechanical application of the concepts to new phenomenon (as if new phenomenon do not often provoke us to rethink the relevance of certain terms or the need for new ones). Unfortunately, I see these weaknesses in most of the essays in this collection. They choose predictable terms in Foucault, they provide fairly standard presentations of his definitions and uses of these terms, they apply them to new cases mechanically, and there is no sense that Foucault's work needs to be updated or rethought for our present and so very different conditions.

Yet I do not want to be too down on this collection. There are interesting essays in each of the book's three parts, which I highlight in my review of each section. Also, for those interested in Foucault's late work in particular, there is much here to intrigue them. Readers looking for basic introductions to the core concepts from Foucault's genealogical period will also be fairly well served.

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Taylor's "Introduction" outlines the three main arguments that form the primary threads that intertwine in various ways through each of the contributions. The essays in this collection reject the depiction of Foucault's work that casts it as eliminating agency and freedom. This critique of Foucault is quite common. The contributes in this collection instead insist that Foucault's work can be see as a reconceptualization of the concepts of power, subjectivity, and freedom as well as of their interrelationships. Taylor, in her introduction, explains that all the contributors believe that Foucault's "reconceptualization facilitates new ways of thinking and acting that are able to counter oppression and domination" (3). This is considered as the "positive and emancipatory potential" to be found in Foucault's work.

The second argumentative thread is Foucault's critique of the naturalized status quo. "A principal objective of Foucault's work is to illustrate the historical and contingent nature of what philosophy has traditionally viewed as absolute and universal"(FKC 2). The essays in this collection repeatedly reference Foucault's revelations that what has appeared (or appears) to be necessary is actually the product of an historically specific intersection of power and knowledge, his critiques of the intolerableness of these systems of power, and his call for us to challenge dominant norms and practices. In the third and final thread of this collection, the authors consider Foucault's examinations and examples of resistance, freedom, and transformation. "Foucault makes clear that experimenting with being other than what we currently are is not only possible but also an integral part of navigating power relations in a way that both constitutes and in turn promotes the practice of freedom" (7). Taking their reference points from Foucault's late work, many of the contributors to this collection present Foucault as a performer and supporter of practices of experimentation with oneself, a cultivation of a distinct, different, and free subjectivity.

While the consistency of these three threads provides the collection with a cohesion normally missing from such edited works, such cohesion is also one of its major drawbacks. This collection is often repetitive. The number of times that Foucault's late work on ancient ethics is summarized is both surprising and disappointing. While other scholars may disagree, I find the later work of Foucault on

ethics decidedly less interesting than his previous archaeological and genealogical periods. I even favor

his often overlooked work prior to his archaeologies, such as work like *Mental Illness and Psychology*.

While this collection does include some useful (though basic) presentations of many of Foucault's main

arguments from *Discipline and Punish*, his pre-genealogical work is almost entirely absent, appearing in

only a few scattered and short references. Foucault's lectures, which have received a immense scholarly

attention (perhaps too much) are also hardly present. This is unfortunate, especially in a book on

Foucault's key concepts. There are other disappointments too, many of which are related to the

collection's focus on the flawed late work of Foucault and the contributors lack of recognizing its

limitations or pushing his work in creative new directions.

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Part I of this collection includes essays on various aspects and examples of Foucault's theory of

power. For the most part the authors in this section give a competent but basic presentation of the key

features of some of Foucault's core concepts. Marcelo Hoffman's "Disciplinary Power" gives a standard

yet efficient presentation of the main points of Foucault's description of the disciplines. Hoffman explains

how these techniques of power replaced sovereign forms of power based on spectacle and violence. The

disciplines produced docile bodies (analyzable and useful) by constructing specific kinds of spaces,

temporal relations, sequences of acts, and relations between individuals. Disciplines began in the margins

of society, spread laterally, and became a generalized form of power with the police, the judicial systems,

and new forms of knowledge (most especially the human sciences) playing a key role in their spread and

their consolidation as the dominant type of power beginning in the mid eighteenth century.

In "Biopower", Chloe Taylor contrasts the Sovereign's right to take life, wealth, services, labor,

and products with the operation of biopower, which incites, enhances, and optimizes the process and

forces of life itself. Taylor describes disciplinary power as a micro-technology focused on bodies in

institutions, while biopower was a macro-technology focused on control of populations by the state. She

describes a number of examples of this biopower, ranging widely over censuses, sexual politics, capital

punishment, Nazi eugenics, humanitarian wars, and today's designer babies and sperm banks. Each of these practices, argues Taylor, had life as its object and some form of enhancement of life as its goal.

Ellen Feder's "Power/Knowledge" examines the relevance of Foucault for analyzing how particular kinds of knowledge are used as instruments of power in contemporary diagnoses of "Gender Identity Disorder." Feder explains how Foucault's conceptualization of how power and knowledge intertwine can help us understand how children suffering from uncertainties about their gender are manipulated by normative regimes that define and enforce specific criteria of normal and abnormal. Feder sees the role of teachers, doctors, psychologists, parents, and other students as akin to the role of the guards in the watchtower of Jeremy Bentham's Panopticon, a model Foucault considered as exemplary of the operation of disciplinary power. But Foucault's work also offers hope for Feder, as his descriptions of the possibilities of resistance, reversals of particular discourses, and transformative technologies of the self indicate the potentials for challenging normative agendas and creating new relationship with oneself and others. Taylor cites the gay pride movement and the depathologization of homosexuality within scientific discourses as examples of these possibilities.

The most distinctive essay in this group is by Adam Lynch. What makes this essay distinctive however is not any of its particular points, which are all straightforward and well known within Foucault studies; rather, it is the broader claim he makes about Foucault's intentions concerning his concept of power. In his "Foucault's Theory of Power", Lynch argues that Foucault not only examined historical specific systems and techniques of power, but also developed a grander *theory* of power. Lynch, in a rare argument for Foucault scholars, presents this as "*basic framework*: a set of theoretical presuppositions which constitutes the heart of Foucault's theory of power" (26). This is an intriguing line of argument, in particular because most Foucault scholars focus on the historical specificity and limits of Foucault's different kinds of power. It is rare to see a scholar argue that Foucault's ambitions were a framework for studies of all systems of power. Lynch lists and elaborates what he considers the core tenets of this theory, including: power is omnipresent (it is not localized in subject, space, or state but is rather active everywhere); power is exercised (it is not a substance or a possession); power is immanent (not imposed

from an outside but operates as a force within every situation); power is intentional yet non-subjective (local actors use techniques for specific purposes but these techniques have origins and consequences that exceed local actors); power is capillary and comprehensive (local relations interconnect and crystallize into comprehensive systems); and all systems of power are doubled and disrupted by equally ubiquitous forces of resistance. This is a creative rereading of Foucault. I agree with Lynch that there is more framework-building in Foucault than normally acknowledged, and that Foucault's formulations on the features and operations of power frequently gesture towards a framework with utility beyond a particular period. Lynch here opens up some provocative questions about exactly which features can be generalized beyond particular periods and which are specific to a particular period but no other.

This section, though solid in most of its presentations of Foucault on power, is not without some significant shortcomings and blind spots. Feder's chapter on power/knowledge does a poor job of explaining exactly what is meant by this hybrid term. It is one of the richest concepts in Foucault, yet in her essay it receives only a cursory explanation without much insight or excitement. Also, Feder's examination of the utility of power/knowledge for GID is fairly weak, in part due to its loose and unconvincing extension of Foucault's analysis of the Panopticon. Likening children's teasing to actions of the prison guards of the Panopticon is neither accurate nor suggestive. Feder here makes a mistake made by many in this collection: extending Foucault's terms developed for disciplinary types of power to more contemporary and very different phenomenon.

There are other limitations of this section. Hoffman focuses on disciplinary controls of individual bodies, but misses the role of groups (such factory workforces or military units) and comparative systems (which depend on larger populations) in operations of disciplinary power. He also notes the importance of the process of geographical diffusion of disciplinary techniques but fails to richly draw out the details and implications of this often overlooked but significant vein of argument in Foucault. Hoffman also, in his discussion of Frederick Taylor's scientific management as an example of disciplinary power, highlights Taylor's struggles with worker resistance and recalcitrance, but fails to explore the myriad examples of such phenomena in Foucault's *Discipline and Punish* and of what they mean for his concept of power.

Lastly, Chloe Taylor rightly emphasizes the importance of the crystallization of power relations into larger systems, but provides very few details on how this crystallization takes place and misses an opportunity to include material from *Discipline and Punish* that provides some of these specifics. Taylor also takes large leaps to connect Nazi eugenics with genetic engineering of babies today, not only sliding over the substantial differences between these practices, but failing to note the need to craft updated versions of Foucault's arguments for the very different types of power in operation today.

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Part II of this collection examines the relations between power and bodies in the work of Foucault. Bodies were indeed central to Foucault's rethinking of power, resistance, and freedom. In her essay in this section, Johanna Oksala plausibly argues that the "aim of his genealogical histories is precisely to show how history and bodies are bound together in complex ways in the development of modern forms of power" (91). While each of the authors in this section explores different dimensions of the intersection between power, bodies, resistance, and freedom, all of them see bodies in Foucault as the principal targets, instruments, and limits of power.

In his "Foucault's Conception of Freedom," Todd May argues that Foucault provides "situated, historical analyses of our particular situation" in order to show how forms of power that both create and constrain us are ultimately contingent, fractured, and fragile, and thus capable of being changed or overcome (75). For May, the contingency of systems of power and of the capacity of individuals to challenge them is closely connected to Foucault's understanding of 'freedom'. According to May, "the question of freedom motivates [Foucault's] work", but the central question for Foucault is not (as it has so often been for philosophers), "'Are we free?' Instead, the question is, 'How are we historically constrained and what might we do about it?" (75) Foucault's notion of freedom is neither abstract (e.g. as a right), nor negative (freedom from something), but rather a concrete set of positive freedoms (freedom to do something). According to May, the key expressions of this freedom in Foucault are the experimental practices of subjects engaged in challenging specific, intolerable forces of power.

Eduardo Mendiata's essay "Practice of Freedom" also focuses on freedom in Foucault as a kind of practice. Mendiata claims that Foucault develops "an extremely original analysis of freedom" that does not consider freedom as a given, an *a priori*, or a primordial and foundational right of the subject. These conceptualizations of freedom are frequently found in the history of political philosophy and serve as the grounds of legitimacy of modern states (112). But Foucault considers freedom as a practice, a vocation, a provisional achievement that must be cultivated and maintained. Similar to power in Foucault, freedom is not a possession; rather, it is an exercise. Freedom is not unitary or ontologically stable; freedom is relational, generative, and creative. We practice freedom when we divorce ourselves from the impositions of power, generate new relations among the elements of our own bodies and those of others, and create new bodies and identities not determined by the standards and rules of power. For Mendiata, Foucault's own work is a practice of freedom; Foucault's "science of freedom" challenges us to exceed, transgress, and overcome the limits of power's subjectivation of us. In our recalcitrance and our creativity we can produce the new truth of our freedom.

Karen Vintges' "Freedom and Spirituality" examines the concept of "political spirituality" that Foucault developed in his late work. For Vintges this concept is interesting because it draws upon ancient Greek, Roman, and Christian practices to advocate for a contemporary spiritual mode of experience. Yet rather than be focused on the soul or the supernatural, this spirituality is corporeal, of the body, focused on transforming the body through repeated exercises of self-creation and ethical transformation. The embrace of a spirit of "parrhesia" ('saying everything') and a detachment from western notions of a rational subject or soul, makes possible, says Vintges, more democratic, pluralistic, and spiritual forms of community and knowledge. She argues that Islamic feminists in Middle Eastern countries are examples of this "political spirituality" in practice today.

The strongest essay in this section belongs to Johanna Oksala. Her "Freedom and Bodies" makes several interesting arguments in its exploration of the interrelations between power, resistance, freedom, and bodies. As Oksala explains, in Foucault bodies are not natural givens but are rather shaped by society through such practices as work, schooling, eating, beauty, and medicine. Foucault's genealogical work,

says Oksala, is intended to provide a flexible methodological and conceptual toolbox that can be used to show how what we consider natural or necessary is really the product of contingent, historical, and culturally variable techniques of power. According to Foucault, the body became a central focus of systems of power during the age of the disciplines (roughly beginning in the mid eighteenth century). During this time a number of key institutions—factories, schools, prisons, hospitals—developed new techniques for organizing and optimizing bodies as forces of production. This is all basic but helpful Foucault.

Where Oksala's essay becomes most interesting is in her descriptions of the influence of Nietzsche on Foucault and of the non-discursive excesses of the body that make possible practices of resistance. While Nietzsche is often cited as an influence on Foucault for his focus on power (Nietzsche's will to power serves as an important precursor to Foucault's own relations of power), he is much less often noted for his influence on Foucault's emphasis on bodies as the conditions, forces, sites, and stakes of power and resistance. Nietzsche valued the materiality and productivity of bodies over the ideal abstractions of philosophy; and Foucault's own work reflects this understanding of bodies as the material elements and forces that serve as the grounds of both the operation and disruption of relations of power. Drawing on this Nietzschean influence, and in contrast to most of the interpretations of Foucault which consider him as social constructionist, Oksala argues that while Foucault certainly resisted any reductions of our understanding of bodies to some fundamental and stable biological objectivity, Foucault also did not deny the materiality of the body. The body in Foucault is not reducible to discourses, either in its representations within systems of knowledge or its manipulations by instruments of power. The body's organs, somatic locations, functions, anatomo-physiological systems, sensations, and pleasures are intertwined with practices of power, but also exceed them.

This excessiveness of the body is one of the principal sites of possibility for resistance in Foucault. "Bodies are capable of multiplying, distorting and overflowing their discursive determinants and of opening up new and surprising possibilities that can be articulated in new ways" (94). Oksala points out that a number of feminist and queer scholars have been inspired and guided by the work of

Foucault to challenge the dominant normalizations of sex, gender, and bodies. Feminist and queer politics have challenged the manipulations of the body by power, sometimes by using power's own terms in a tactical reversal of power that shows the fractures, indeterminacy, and contingency of all power relations and the possibility of new and different valuations and performances of bodies. Foucault's critique of 1960s discourses of liberation from repression have helped such scholars focus on the productivity of power and the ways that bodies resist the constrained forms of production imposed upon them through creative politics of experimentation, for example the new practices and identities that emerged in the gay rights movement.

Oksala's essay is indeed thought-provoking and it successfully intertwines an introduction to the basics of Foucault and some new directions for readings of his work. Yet this section on 'Power and Bodies' also has a series of questionable readings, oversights, or missed opportunities, even in Oksala's essay. While she mentions the frequently cited examples of queer and feminist scholarship drawing upon Foucault, what has always struck me about such examples is that within the wider social discourses, especially in the case of gay rights, it is precisely arguments that resist the notion of 'choice' or contingency of sexual identity and instead insist upon the naturalness of queer bodies and acts that have proven most mobilizing and decisive for the movement. Even a brief consideration of the complicatedness of the relations of power, resistance, and the body as well as between scholarship and political movements would have been welcome on this point. Drawing connections between Foucault's more abstract formulations of the relations between bodies and resistance and the historical descriptions of such unruly bodies in his work *Discipline and Punish* would also have pushed this essay in a more concrete and original direction.

May argues in his essay that Foucault assumes a metaphysical freedom, yet May fails to explain what exactly this metaphysical freedom would be for Foucault. While he suggests that this is a metaphysical 'human freedom', his essay also raises the connection between Foucault and physics. While Foucault's rhetoric of 'physics of power' or 'micro-physics of power' are often noted, the possibility that these are influencing his work more literally than normally assumed, and influencing his ideas on

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contingency, indeterminacy, and resistance in particular, deserves more examination than it has been given. What May identifies in Foucault as an implicitly assumed yet fundamental 'human freedom' may rather be the signs of influence on Foucault of strands of physics and other sciences that argue for inherent dimensions of indeterminacy, unpredictability, and chaos in the world. The freedom made possible by this metaphysics may not be particularly 'human.' This kind of freedom might also constitute another set of limits on human agency, as these kinds of contingency and unpredictability may also constitute obstacles to an exercise of human intention.

A set of questions also lingers when considering Mendiata's contribution, and indeed all the contributions within this collection that discuss Foucault on freedom. While Foucault's late work is clearly engaged with a rethinking of the concept of freedom, it becomes unclear what the implications or consequences are for how we think about what is normally called freedom. How does the notion of freedom in Foucault relate to political rights? How does it relate to social movements demanding greater political freedom? One of the unfortunate tendencies in Foucault's late work, a tendency that becomes even more pronounced in the secondary literature, is that freedom becomes something very personal, a 'care of the self', a self-creation, a personal 'vocation.' Readings of Foucault like Mendiata's leaves the relation of Foucault's notion of freedom to more traditional forms of a politics of freedom unclear. This work also contributes to a quietist reading of Foucault in relation to larger politics; Foucault's 'freedom' begins to appear as a very 'noble' practice, that is, privileged, comfortable, and detached. It would be a significant disappointment if that were Foucault's principal contribution to our understanding of freedom.

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In Part III, the contributors continue the collection's examination of Foucault's late work on ethics and self-creation while offering some examples of contemporary forms of power to be resisted and contemporary forms of self-transformation that offer hope that that they can be. In his Foucault's "Theory and Practice of Subjectivity" Edward McGushin repeats the common refrains of this collection. Foucault does not present a theory of the self; his late work depicts the struggle to create a new self; the ancients offer models of self-to-self relations that defamiliarize the present forms of subjectivation and offer

forgotten possibilities for different techniques of self creation; and we should craft new tasks and new

bodies for ourselves for the sake of new, deeper, wiser relationships to ourselves. McGushin argues both

that Foucault provoked us to "become ourselves" and embrace the "complexity of the struggle to be true

to oneself, to discover oneself, to express oneself" (131). Yet he also argues that Foucault's work depicts

the self as a continuous becoming and that for Foucault no true or essential self is possible or desirable.

McGushin does offer one interesting note. He points out that the subjectivity in the late work spells out

more fully how subjects in Foucault are both active and passive. While they are trained and disciplined

within institutions and systems (like marketing, cell phones, and the internet), they are also capable of

crafting creative and dynamic relations with themselves independent of these impositions of power.

McGushin hints at connecting Foucault's earlier and later work, and exploring updates to power,

subjectivity, and their relations. Though he fails to deepen these points with compelling substance and

examples.

Cressida J. Heyes argues in her essay "Subjectivity and Power" that Foucault's work on

disciplinary forms of power and confessional practices should be applied beyond his own case studies.

She chooses weight loss programs as a good contemporary example of how scientific discourses,

regiments of body management, and new practices of confession craft disciplinary subjects. According to

Heyes, while these programs appear to offer autonomy and liberation for their subjects, they really

produce an intensification of power relations and a new example of a disciplined subject, one that still

internalizes norms and shapes their body in relation to dominant standards of appearance and

performance.

In "Practices of the Self," Dianna Taylor argues that Foucault's late work is in part an attempt to

challenge and overcome a Christian heritage of self-abnegation. The practice of confession is the primary

reference here: we confess to priests, to doctors, to authority figures of all kinds and in the process enact

our submission, deny our own power, and prevent the emergence of different and better relations between

our selves, our bodies, and truth. Taylor argues that for Foucault, critique is a practice not only of

criticizing specific forms of power, but also of the practicing of an alternative, insubordinate constitution

of our selves. Taylor provides the example of a subject today pressured to self-sacrifice in relation to doctors with positions of authority and supported by the legitimacy of and their expertise in certain forms of knowledge. Taylor argues that challenging the positionings of a subject as a 'patient' and 'consumer' while maximizing our critical and creative capacities by not meekly accepting a doctor's authority but seeking multiple opinions and alternative medicines and treatments can challenge these relations of obedience and overcome our tendency to self-sacrifice. Such critique and insubordination can help us "facilitate the development of new, emancipatory forms of subjectivity" (174).

The standout piece from this section of the collection is Brad Elliot Stone's "Subjectivity and Truth." The essay does not start out well, but it ends with some interesting emphases on points within Foucault's late work not normally highlighted by scholars. He begins the essay discussing the divorce of subjectivity and truth in the modern age. This continues an unfortunate trend in Foucault scholarship that focuses on this late period in his work without tying it to the earlier genealogical studies. One of the many original ideas of Foucault in works such as *Discipline and Punish* was precisely the role of systems of knowledge and their crafting of certain ideas of true and false as tools used to control subjects, to mold them according to certain models justified by scientific facts about what is normal and abnormal, healthy and sick, sane and insane. The production of truths was there analyzed by Foucault as a tool of submissive subjectivation. Stone is on a bit stronger ground when he sharpens his point: truth has been divorced from ethics in the modern age. Whereas in ancient philosophy there is a tight interconnection between the ethical relations one has with oneself (how one shapes oneself according to a code of conduct) and what one believes to be true, in the modern age truth has been taken over by science.

For Stone, Foucault's late work is a call for us to recover an ethical relationship to truth, to see the belief in a truth as something that transforms us. Christians would call it a conversion. Stone claims that this understanding of truth as transformative obsessed Foucault towards the end of his life. The concept of parrhesia that Foucault adopts from ancient Greek and Roman philosophy becomes central to his late project to rethink ethics. And on parrhesia is where Stone makes several suggestive points. In contrast to the sole focus on the individual and its practices of self-creation that you find in much of the

secondary literature on Foucault's late period (including much of it in this collection), Stone emphasizes the wider communal and political implications of Foucault's late project. Stone lists the five most important characteristics of parrhesia: frankness (one speaks for oneself, not as a representative for a higher or other power), truth (understood as one speaking from a sense of conviction, not a certainty of fact), danger (one must speak especially when doing so puts one at risk), criticism (the hearer of the speech should be provoked to examine themselves), and duty (speaking is a result of a decision not an obligation). These five points make clearer than anywhere else in this collection what the political significance of this late work can be. Foucault is here crafting a set of ethics for a 'fearless speech' in the face of intolerable forces of power. Stone also calls attention to the influence of the Cynics on Foucault's late thought and their emphasis on ethics being a public activity and part of the life of a community or collective. Instead of the aesthetic orientation that defines much of Foucault's work in this period, and many of the readings of that work, here in Stone's essay we find a late Foucault mapping out a set of guidelines for a courageous and subversive discursive practice. While Stone never makes the following step explicit, his work does more than others in making such a next step possible. Here we can see described for us not the cares of a solitary philosopher crafting his life as an example of aesthetic self-creation, but more the political activist who sees knowledge and speech as systems of power, as weapons for a strategy in a fight.

Problems exist in this third part consistent with problems within the whole collection. There is too often in these essays an unfortunate de-historicization that takes two forms. First, a number of these essays use a simplified and problematic projection of disciplinary power into the present to frame their analysis. But this either dismisses or does not consider the possibility that these disciplinary techniques have been transformed or replaced by new techniques of power, or dramatic transformations in the operations of the disciplines. The second lack of historical context concerns the unclear contemporary relevance of the ancient models and practices of ethics examined by Foucault. Even in Foucault's own work such relevance is unclear and probably undecided for him.

The authors in this collection act as if what Foucault finds in these ancient texts is easily transferable to contemporary conditions and practices. I am more skeptical; and the fact that many of their examples of contemporary ethical resistance seem very superficial applications of Foucault or fairly inconsequential in their implications, only increases my skepticism for the utility of late Foucault for understanding practices of resistance today. Even Stone's interesting work in the final part of this collection on Foucault's reading of the ancient practice of parrhesia fails to connect these with interesting examples from contemporary movements. Are such practices not occurring today? Are there not individuals and groups speaking out, courageously, in danger to themselves, confronting power, and creating new selves and new communities in the process?

These essays include only minimal explanations of the ways in which these practices of freedom or ethics constitute real and effective practices of resistance and transformation. It is often, indeed much too often, simply asserted that they do. Too much of this discussion of Foucault's late work falls into the stale and disappointing rhetoric and self-help philosophies of finding oneself or cultivating a new self. This emphasis on self-creation and aesthetic experimentation also mimics so much of contemporary marketing and the contemporary 'I-culture.' On a related point, the impact of contemporary technologies on disciplinary power or power generally, and the possibilities of Foucault's thought in relation to them (or its limitations in relation to them) are barely mentioned in this collection. Foucault crafted his thoughts on the disciplines in part by identifying the most decisive institutions and techniques of power of that period. What we would need in an updated application of Foucault is identification of which contemporary institutions and systems play the critical roles that Foucault felt militaries, factories, hospitals, schools, and prisons played during the disciplinary age. Such identifications, and even the conversation about the need for such, are not present in this collection.

For all their efforts at seeing Foucault as relevant to our time, their presentations of his concepts strike this reader at least as too standard and dull to inspire rereadings of Foucault and excitement over his work, let alone creative returns and new uses of him. In addition, for all the moments in which these authors attempt to apply Foucault to contemporary phenomenon, their choices seem idiosyncratic or

predictable. For example Heyes's work on weight loss is a missed opportunity to explore how disciplinary and confessional techniques have been transformed or become part of new discursive regimes that have articulated new intersections of health, medicine, biological sciences, beauty, and new technologies. Simply claiming that contemporary practices are examples of the kinds of power Foucault identified as disciplines seems a bit mechanical and lacking provocative insight or political positioning. Maybe that is beyond the agenda of a collection such as this; but part of an updating of a philosopher's work, part of the argument that his or her work is still applicable, must include connections and directions they themselves did not pursue or see.

This collection is not without its strong moments and for certain readers not without some valuable utility as an introduction to Foucault. But if Foucault's work is a toolbox, different and more of his tools should have been chosen, and a better collection could have been built.

Chapter 2: Foucault, Technologies of Power, and Machines

In this chapter I provide a close reading of Foucault's 'technologies of power' as it is presented in Foucault's genealogical works. While much of the focus of this chapter is on identifying and clarifying what I believe is an underappreciated aspect of Foucault's work—his analysis of technology and machines—the present chapter is also part of some initial steps towards developing a new framework for studies of the digital and cybernetic technologies and their dramatic reshaping of contemporary identities, institutions, cities, and systems. The long-term ambition of this line of research is a collection of concepts, an historical argument, and a set of methodological foci and practices that collectively constitute a stronger framework for studies of technology than those provided by such paradigms as actor-network theory (ANT) and the social construction of technology (SCOT). I believe that current framework offers an adequate account of the emergence, operations, and consequences of contemporary technologies. My hope is that by returning to Foucault, to read him differently, and eventually building an indebted though not derivative framework of my own out of my engagement with Foucault, that I can provide a compelling framework for contemporary studies of technology.

While Foucault has been among the most influential theorists for thinking about how modern power operates, his conceptualization of 'technology' and the specifics and implications of his concept of 'technologies of power', have been relatively neglected. While a large number of scholars have utilized Foucault to analyze various forms of technology and technologically-mediated power relations (in particular studying the spread of surveillance systems, studies with strong echoes and clear extensions of Foucault's own work on disciplinary surveillance), Foucault's more general positions on the history, definition, functions, and potential of technology have been less well studied. In his book *Technology and Social Theory*, Steve Matthewman makes the claim that while Foucault spent relatively little time analyzing technology as objects and that commentaries on Foucault routinely ignore the centrality of technological-related terminology in Foucault's work, "we need to reckon with technology if we are to understand Foucault" since "technology is the lens through which he made sense of the world"

(Matthewman 2011, 66). This is an important argument because if technology played such a central role in Foucault's analysis of modern relations of power (and I believe it did), yet it has been overlooked by most commentators, there exist opportunities to reassess Foucault's work on technology. But there are also opportunities to consider how that reassessment can impact readings of Foucault on the origin, operations, and evolution of power, the role of machines in disciplinary projects, and the possibility of any consistencies or divergences from Foucault's articulation of the connections between technology, power, and subjectivity during the period of the disciplines and their relations today.

Foucault's work on disciplinary technologies of power frequently displays elisions between several terms including 'technology', 'technical', and 'technique'; yet such elisions can be seen as part of a "useful correction against narrow definitions of technology" (Willcocks 2006). While his increased use of 'technique' and 'technology' were indicative of a transformation in Foucault's conceptualization of power and a greater appreciation of the role of technology in organizing human behavior, they also indicate a specific conceptualization of technology itself emerging within Foucault's work (Behrent 2013). Foucault did not pursue studies meant to identity the essence of technology (like those of Heidegger), but, rather, sought to analyze specific histories of technological practices of power. Rather than privileging either the practices and techniques of power or the role of specific objects and machines, Foucault's notion of technologies of power was crafted to examine the complex, particular, and evolving relations between these elements within any system of power.

Foucault's studies of power were studies of forms of technocratic thinking and practices which both produced and were sustained by technological devices such as artifacts, architecture, and spatial arrangements. The use of tools and artifacts, or the design of spaces, were inextricably intertwined with systems of knowledge and projects of control. Foucault analyzes technologies as kinds of knowledge, activities, and practices, helpfully moving us away from accounts that restrict technological analysis to simply objects or interrelated systems of objects (Matthewman 2011). While artifactual-driven innovations (e.g. the rifle, new production machines, the stethoscope, new spatial layouts) are critically important to Foucault, Matthewman argues that Foucault's understanding of technology sees them as part

of "organizational matrixes" that commingle and combine the multiple dimensions and types of technology (Matthewan 2011, 58). In a similar vein, Rooney (2008) argues that Foucault's primary contribution is the development of an account of technology that places it within the context of a socio-technical assemblage. Technology is not simply artifacts or kinds of knowledge or techniques or practices—it is each of these, interrelated with each other, and operative within specific contexts. In principle, each of the parts of a socio-technical assemblage is inseparable and interdependent, and none are privileged over the others (though in particular circumstances one aspect may predominate).

I agree with these scholars who have identified a multi-dimensional understanding of technology within Foucault; and I agree that his perspective has some strong advantages over other philosophical perspectives on technology such as Heidegger and paradigms for the study of technologies such as Actor Network Theory (ANT). But what I want to examine in this chapter are the reasons Foucault begins analyzing systems of power under the rubric of 'technologies of power'. I want to identify what specific transformations in his thought motivated his shift towards 'technology' as the primary referent for understanding how power operates in modern societies.

The terms 'technology', 'technique', 'technical', 'procedure', 'mechanism', and 'instrument' are strewn throughout *Discipline and Punish* and *History of Sexuality Vol I*. This is a substantial shift from the studies of epistemes, discourses, and rules in his earlier archaeological period. Disciplinary forms of power are described as "a political technology of the body," "a certain technology of power over the body," "a subtle, calculated technology of subjection," "a technology of power and knowledge," "a whole technology of control," and a "political technology of life" (DP 26; DP 31; DP 218; HS 123; HS 127; HS 146). The emergence of disciplinary power is described as "a veritable technological take-off in the productivity of power" (PK 119). What is most stunning about how overlooked the question of technology has been in literature on Foucault, is just how central it is to his genealogical work.

In the first half of this chapter I present what I believe are the most important reasons that Foucault shifted towards a technological model for his analyses of modern systems of power, most of which have not been discussed in the literature on Foucault and technology. These reasons primarily

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consist of (a) Foucault's efforts to both draw on and distinguish his account from humanist and Marxist positions and (b) Foucault's identification of a core set of features of modern systems of power that indicated their evolution towards dynamics best described collectively as 'technological'.

I argue that Foucault's shift towards a technological model of power was the result of: (i) his development of a conceptualization of 'productive power' that was both informed by and meant to be distinct from humanist accounts of technological control; (ii) Foucault's interest in distinguishing his account of power from those of the Marxists while simultaneously displaying a consistent and decisive influence of Marx's work on factories, machines, and labor control; (iii) his articulation of the complex interrelations of power and knowledge, with a particular emphasis on the way that certain forms of scientific knowledge extracts information from and then shapes practices of power, a recursive relation akin to the concept of technology as the application of scientific knowledge; (iv) his conceptualizing of disciplinary power as an 'internal mechanism' to what it controls, as a 'physical' set of relations, and as something focused on the 'efficient' organization and production of 'forces'; and (v) Foucault's increased focus on the role of the artifactual—objects, machines, spatial arrangements, buildings—in the operations of modern power coupled with his recognition that the dynamics of power he was analyzing were often reduced to abstract models and then applied in diverse situations, like the blueprints of a technology. I think each of these points played an important role in contributing to Foucault's shift towards analyzing the techniques, instruments, relations, and systems of modern forms of power as types of technology.

In the second half of this chapter I delve into more depth on one point from above: the role of the artifactual. In particular I focus on 'machines' in Foucault. Through a close reading of Foucault's *Discipline and Punish*, I call attention to the repeated references to 'machines' of power. More specifically than just a shift towards a technological framework for studying power, I believe that within Foucault's text there is an argument that disciplinary forms of power are literally a 'machinery of power', or what I call 'machinic power'. In Behrent's article "Foucault and Technology" he briefly mentions how Foucault's reconceptualization of power as a technology was meant to capture how this new form of

power operated as an impersonal, automatic, productive process that efficiently organized concrete behavior by controlling the operations of bodies which are themselves seen as a kind of machine (Behrent 2013). Behrent is right about this, but Foucault's focus on the machine is more varied and pervasive than just bodies.

Foucault nowhere makes this explicit, which has undoubtedly contributed to it garnering so little attention, but a consistent and thickening thread runs through the analyses in *Discipline and Punish*, from his analyses of transformations in the army due to introduction of the rifle, to the transformations of controls within factories in relation to new productive machinery, to the construction of the 'panopticon machine', to the molding of the 'natural machinery' of individual bodies, Foucault describes the emergence and operation of disciplinary power as a machinic power. After identifying six of the key characteristics of this 'machinic power' as I see it developed within Foucault, I present a close reading of these central figures in Foucault—the army and the soldier, the factory and the worker, the panopticon and the prisoner, and the human body—as each being integrated, constructed, and operated as part of this new machinery of power.

Purposes and Principles of Foucault's 'Technologies of Power'

Anti-Humanist, Productive Power

In his article "Foucault and Technology", Michael Behrent provides a useful contextualizing of Foucault's evolving use of the concepts 'technique' and 'technology' (Behrent 2013). According to Behrent, while the term 'technique' appeared in Foucault's early works and was used in a manner consistent with much of French thought during the time (as the shaping and coordinating of human behavior), around 1974, in the midst of his development of a genealogical methodology for studies of productive power, Foucault dramatically increased his use of the terms technique and technology. "The frequency with which Foucault spoke about 'technology' beginning in the early 1970s was a direct consequence of this new way of thinking about power, specifically as Foucault tried to understand the

paradigmatic modern power formation that he called 'discipline'" (Behrent 2013, 81). While slight shades

of different meanings can be discerned between his uses of technique and technology, Foucault's

increased use of these terms (particularly the dramatic increase in his use of 'technology' as in

'technologies of power') was motivated by his innovative conceptualization of power not as a force of

repression and inhibition, but as a force that was generative, investing, shaping, and regulating.

Behrent argues that this new conceptualization of power was double-sided, since Foucault

developed a fundamentally ambiguous position on technology that was simultaneously negative and

positive. On the one hand, Foucault's articulation of technologies of power perpetuated a long-running

French tradition of describing power in negative terms; the techniques of rationalization and

regimentation that controlled human beings were conceptualized as analogous to the way industrial

processes rationally controlled machines and exploited the earth. The spread of new machines and

consumerism in France after World War II spurred a simultaneous increase in the studies of technologies,

their impacts on culture, and their integration into specific institutions, in particular industrial workplaces.

The general tenor of French thought at the time held that these new techniques and technologies were

manipulative, insidious, dehumanizing, and needing to be overcome if humans were to be liberated (a

particularly strong argumentative tendency in humanist and certain Marxist traditions).

While much of Foucault's analysis shares a perspective and vocabulary with these traditions, he

parted ways with them on the question of a fundamental humanist desire for freedom that needed to be

liberated. In contrast to this tradition, Foucault developed what Behrent refers to as a 'positive'

conceptualization of technology. "During the 1970s, 'technology' takes on a ... positive valence in

Foucault's writing because it is instrumental to his project of elaborating a Nietzschean, anti-humanist

conception of power" (Behrent 2013, 83). Foucault sought to diverge conceptually and methodologically

from the humanist preference to view the exercise of power purely in negative, repressive, and juridical

terms—power is what legislates, prohibits, and says 'no'. "We must cease once and for all to describe the

effects of power in negative terms: it 'excludes', it 'represses', it 'censors', it 'abstracts', it 'masks', it

'conceals'. In fact, power produces; it produces reality; it produces domains of objects and rituals of truth.

The individual and the knowledge that may be gained of him belong to this production" (DP 194). Instead of commands, instead of repression, power was the organization of action according to a specific set of procedures, utilizing particular techniques, supporting and enforcing distinct mechanisms, and producing and applying certain forms of scientific knowledge. Foucault's new conceptualization depicted power (not metaphorically, but literally) as a technology: as an impersonal, automatic, productive process that efficiently organized concrete behavior by controlling the operations of bodies which were themselves seen as a kind of machine (an argument I develop in more varied directions and at greater length than Behrent in the second half of this chapter).

According to Behrent, this antihumanist technologization of power had for Foucault "a liberating effect" in that it provided a better understanding of how power actually operated and also "in that it frees us from the humanist myth of a core self or transcendental subject" (Behrent 2013, 87). Developing the notion of technologies of power enabled Foucault to craft an alternative theory of power and fully reject the metaphysical platitudes of a fundamental human essence espoused by philosophical humanism (Behrent 2013, 68). Instead of a subject of knowledge and examination of consciousness, Foucault focused on the impersonal production and practical applications of strategic scientific discourses; and instead of questions of foundation, legitimacy, and justness of power, Foucault focused on how mundane techniques and instruments constructed subjects and molded behavior. "[I]t is not that the beautiful totality of the individual is amputated, repressed, altered by our social order, it is rather that the individual is carefully fabricated in it, according to a whole technique of forces and bodies" (DP 217). But Behrent pushes this 'positivity' too far. Foucault most certainly felt that subject-centered, humanist accounts were problematic for their assumptions of a human nature that was repressed and needed to be freed for an 'authentic' life. Yet there is nothing 'liberating' about Foucault's new account of the technologization of power: in fact, Foucault's perspective is that power reaches much deeper, at a greater level of details, with more pervasive effects than the humanist and Marxists positions claim. Foucault wanted to show how from the 17th and 18th centuries forward, a new economy of power emerged, "a veritable technological take-off in the productivity of power" that created complex systems of manipulation and conditioning.

Subjects were thereafter "fabricated by this specific technology of power" which gained access to and began to control the production of an individual's body, attitudes, knowledge, behavior, social relations, and pleasures—power invests subjects down to the details and in every dimension (PK 119; HS 127; DP 194). In addition, as part of this movement of Foucault towards seeing power as ubiquitous and productive was a dismissal of any talk of liberation—there is no absolute escape into a totally free world of self- or human-only determination. Technologies of power can be resisted, shifted, and reshaped, but they and the technologies they use to construct and control us will remain in some measure and kind ineliminable parts of who we are.

Marx and Marxism

In addition to the anti-humanist possibilities of developing a concept of power as technology, Foucault's shift towards technological models also indicates the often over-looked influence of Marx on his development of a model of disciplinary power. Foucault's analyses of 'technologies of power' display clear influences from the work of Marx. However, it also shows clear influences of Foucault's efforts to distance his own conceptualization of power from the work of Marxi*sts*.

Foucault constructed his accounts of technologies of power in direct opposition to Marxist formulations of power as ideological, repressive, superstructural, and concentrated in the state. His opposition to ideological conceptions of power were two-fold: first, they overlooked how power depended upon the "production of effective instruments" of observation, registration, and control within specific institutions—it did not operate in the mind as a mystifying set of ideas, it operated on bodies and through "subtle mechanisms"; second (and more on this below), the kinds of knowledge that power depended upon were not ideological constructs but the "formation and accumulation of knowledge" about bodies and populations to better control them—a useful, practical, scientific knowledge that informed specific techniques of power (PK 102). Power as a technology also helped Foucault distinguish his account from conceptualization of power as repressive. This is clearly seen in his rethinking of sexuality. For Foucault, modern forms of sexuality were not forms of repressive power that kept people from doing

things, but instead were a blending of objects, techniques of power, and forms of knowledge that organized a sequence of actions (e.g. bodily habits) to produce certain effects. Instead of the Marxists hypothesis of a repressive sexuality being an imposition on lower classes to morally legitimize their constricted economic conditions, Foucault argues that sexuality was initially a specific technology of power and knowledge invented by the bourgeoisie for the purpose of producing their own distinct kinds of bodies, sensations, pleasure, discourses, and truths (HS 123).

Foucault also used a technological model of power to reject the Marxist concentration of power within a state or a superstructure. For Foucault, power could not be "localized in a particular type of institution or state apparatus" since power as a "political technology" was much more "diffuse," it implemented "a disparate set of tools or methods", it was a "multiform instrumentation" that was "in its mechanisms and its effects ... situated at a quite different level" that was below, beyond, and between the "state and its apparatus" (DP 26; HS 89). Power as a set of technologies operated more immediately and ubiquitously than the notion of a concentration of power within the state indicated; it operated on the materialities and forces of bodies through techniques and control, and only derivatively were these integrated and organized into the larger systems of rights, laws, and state power (HS 89: HS 95-96).

Yet Foucault's frequent efforts to distinguish his own work from that of the Marxists has had the additional consequence of covering over his significant debt to Marx. I think this is particularly unfortunate when reviewing Foucault's articulation of a 'technology of power'. I believe that Foucault's technologization of power—both his own thinking about power as a technology and also his recognition of an historical process of power becoming more technological—is deeply indebted to Marx's own analyses of the organization of industrial labor, the adoption by factories of military models of control, the focus by capitalists on the breaking down and regulating of time, and the general inventiveness of the bourgeoisie.

Foucault was especially influenced by Marx's analyses of how new machinery such as the rifle and production equipment within factories spurred a transformation in systems of power. In Foucault, just as in Marx, as new technologies became more important, power became more technological. In *Discipline*

and Punish, Foucault notes that the early emergence of the disciplines was deeply implicated in the need to articulate interconnections between the control of bodies, more detailed regulations of time, and the operations of new machines—an intersection Marx focused on at length in *Capital*. Marx had observed that the technical breakdown of military training served as a model for the technical decomposition and recomposition of factory labor. For Foucault, the military and the factory were probably the two most influential institutions in the development and spread of disciplinary power (Panoptic prisons would be their eventual, ultimate exemplification). The military's experience with constructing new soldiers and massive fighting forces served as the model for the construction of the new industrial laborer and organization of the production apparatus as a whole.

In both cases, these different institutions were faced with the imperative to "invent a new machinery" of power that was capable of controlling bodies, meshing their movements with those of new machines, and connecting the control of an individual with that of a larger composition of men (DP 162-164; DP 218-221). What Foucault learned from the work of Marx on factory discipline was that "the technological mutations of the apparatus of production, the division of labour and the elaboration of the disciplinary techniques sustained an ensemble of very close relations ... Each makes the other possible and necessary; each provides a model for the other" (DP 218-221). Disciplinary power developed as a technology of power in large measure because it was itself spurred on by, necessarily developed in relation to, and modeled on, specific kinds of new technologies.

The control of time was decisive for Marx in his studies of capitalism and factories as it became for Foucault in his studies of disciplinary technologies of power. When Foucault suggests some of the central questions behind disciplinary controls of time, he clearly echoes Marx: "How can one capitalize the time of individuals, accumulate it in each of them, in their bodies, in their forces or in their abilities, in a way that is susceptible of use and control? How can one organize profitable durations?" (DP 157) Marx's own analysis of the need for capitalists to focus on the temporalities of labor control is an obvious template for Foucault's generalization of this serialization of activities as a feature of disciplinary power throughout modern institutions. Following Marx, yet generalizing his insights, Foucault argues that "The

gradual extension of the wage-earning class brought with it a more detailed partitioning of time" and helped spur the development of an "entire technology of human behavior" through which the disciplines sought to supervise behavior in multiple institutions and in each one capitalize time, make it useful, regular, precise, productive (DP 157; DP 149-151; DP 154). According to Foucault, Marx was more right than he realized: while factories provided a critical early impetus for this temporal disciplining of bodies, these profitable durations were soon being produced by technologies of power not only within militaries and factories, but within schools, prisons, hospitals, and other institutions.

Finally, in another often overlooked aspect of Foucault's notion of technological power, he calls attention to the inventiveness of these new "machines of power" and directly connects this "supple inventiveness" to the "successive transformations" of the power of the bourgeoisie, a strong echo of Marx's own analysis of the constant revolutionizing of forces of production (PK 160-161). Just as capitalists constantly updated their machines to improve productivity and efficiency, so too did disciplinary institutions repeatedly revise their disciplinary technologies to improve the efficiency and productivity of their controls. Like the bourgeoisie using their profits to reinforce and modify their apparatuses of power in a "mobile and circular manner", Foucault argues that disciplinary institutions produced useful forms of knowledge capable of being 'reinvested' into an improved set of controls (PK 160-161). These dynamic links between forms of knowledge and techniques of power were also a critical feature of Foucault's identifying of the disciplines as technologies of power.

Power-Knowledge

Foucault's rethinking of the relations between power and knowledge is central to his conceptualization of 'technologies of power'. Foucault's insistence on the constitutive intertwinements of power and knowledge was part of an effort to reject models of knowledge and power that pitted them in opposition, depicted the renunciation of power as a condition of gaining knowledge, and placed the subject as the source or center of knowledge creation. "[W]e we should abandon a whole tradition that allows us to imagine that knowledge can exist only where the power relations are suspended and that

knowledge can develop only outside its injunctions, its demands and its interests" (DP 28). Foucault grounds the call for this shift in perspectives in an historical argument: the relations of power and knowledge became more technological, and unless models of analysis analyze them as technologies they will not be able to understand their complex and fateful entanglements.

Foucault pinpoints the emergence of a new relationship between power and knowledge as the moment in which the disciplines passed a "'technological' threshold" (DP 224). While many of the techniques (such as time tables and cellular spatial divisions) had long histories within specific institutions (such as monasteries), the consolidation of a technological form of power new relations between forms of knowledge and systems of power that intensified their effects and diversified their application. "[W]hat was new, in the eighteenth century, was that, by being combined and generalized, they attained a level at which the formation of knowledge and the increase of power regularly reinforce one another in a circular process" (DP 224). The army, hospitals, factories, workshops, schools, and prisons were reorganized by new forms of power-knowledge that turned institutional spaces, activities, and subjects into mechanisms of objectification and instruments of subjection simultaneously and recursively. This 'double process' was the decisive point of passage of the 'technological threshold' for modern forms of power. Power used knowledge to invest these spaces and subjects; through these investments, power produced new formations of knowledge in an "epistemological 'thaw'"; in turn, these new forms of knowledge were used to multiply, improve, and create new investments of power. For Foucault, "it was this link, proper to the technological systems, that made possible within the disciplinary element the formation of clinical medicine, psychiatry, child psychology, educational psychology, the rationalization of labour" (DP 224). These key institutions became the fields of study and producers of knowledge for the emerging human sciences; as well as their fields of application in their role as instruments and techniques of power.

At end of the eighteenth century these new techniques played a critical role in the emergence of the 'clinical' sciences, making possible the detailed, constant observation and analysis of individuals (in contrast to a focus on species within earlier sciences) upon which these sciences built themselves. These

new procedures of power and forms of knowledge "appeared together, the one extending from the other, as a technological ensemble" (DP 255). Many elements of what would become the sciences of man originated in the Middle Ages, but they were radically reformulated, recombined, applied, and generalized during the emergence and spread of the disciplines. Power utilized a range of "subtle mechanisms" and "effective instruments" such as new methods observation (e.g. classrooms organized like analytical tables), new techniques of registration (e.g. new medical charts in hospitals), and new forms of examination (e.g. time studies in factories) that could not "but evolve, organize and put into circulation a knowledge, or rather apparatuses of knowledge" (PK 102). These sciences had their "technical matrix" in the subtle and effective mechanisms of the disciplines: the examination, the definitive procedure of disciplinary power, combined in its operation the mechanisms for the subjection of what had been objectified (through deployments of power) and the objectification of what had been subjected (through the application and establishment of certain truths) (DP 184-185). The imperative to know and control individuals in depth pushed institutions to draw upon and spur the development of sciences such as a "psychology, psychiatry, pedagogy, criminology, and so many other strange sciences" (DP 226). What the technologies of the telescope, lens, and light beam were to new physics of the time, so were the disciplinary technologies to the new knowledges of man (DP 170-171). Disciplinary institutions created the individual files and ignoble archives that gave birth to the human sciences (DP 191). For example, new penitentiary techniques associated with the disciplines' reorganization of prisons produced new forms of criminology, penitentiary sciences, and the category of the 'delinquent'. This was not the discovery of the delinquent, but its construction as an object of knowledge and target of power. This "correlative constitution" and "fundamental implication" between power and knowledge, between the disciplines and the human sciences, constituted the core of this technology of power and power as a technology (DP 28).

Technical Qualities

Foucault's shift towards a technological understanding of power is also correlated with his identification of a series of significant technical qualities of modern practices of power. These technical traits of the disciplines distinguished them from traditional forms of power and signaled the close connections between transformations in power in the early modern period and parallel transformations in technologies and forms of knowledge. Foucault's major shift in studies of power cannot be summarized simply in terms of a 'productive power'. The new operations of power that Foucault identifies have important other characteristics as well, characteristics that suggest that they are best understood as technologies. Foucault defined disciplines as technologies in part due to their immanent mechanisms of control, the physicality of their operations, their primary objective of controlling productive forces, and their focus on efficiency.

Compared with the majestic pomp and pride of the monarchical forms of power, disciplines were humble and modest mechanisms, not excessive like the monarchies' spectacles, but rather subtle and insidious in their operation and spread (DP 170). What was definitive for these immanent mechanisms of disciplinary technologies was that "in the mechanism itself" there operated "a calculated manipulation" (DP 137-138). They were not about the meaning communicated by a great event, but about the construction of specific mechanisms by which something was operated or produced. Disciplinary power created arrangements in which power was exercised not as an imposition from the outside, but as an internal function; disciplinary power was "a way of making power relations function in a function, of making a function through these power relations" (DP 207). The disciplines established their mechanisms at several interrelated scales, like interrelated parts of a large technological ensemble. Not only does this happen at the level of the institution and the mechanisms by which it runs (e.g. techniques of spatial distribution and analytical classification), but also at the level of individual bodies (the organization of the body's movements), which incorporated the disciplines into their own functionings so that they could become instruments of the institutional project as a whole.

Foucault also identified these new forms of power as technological since they were situated "at the elementary, technical, merely physical level" (DP 221). The disciplines were a political technology that was technical, calculated, organized; while they do not use weapons, or violence, or terror, they "remain of a physical order", of direct and physical subjections, of forces acting on forces, of techniques manipulating material elements (DP 26). Foucault brings this out most clearly in his discussion of the relationship between the formalization of democratic rights within representative regimes and the operation of the non-egalitarian micro-powers of the disciplines. While rights codified a juridical framework and egalitarian principles, the "real, corporal disciplines" provided the effective, coercive technologies that guaranteed "the submission of forces and bodies" that served as the "other, dark side" and real foundation for the law, political power, and formal liberties (DP 221-222). The physical controls of the disciplines sought to link, bind, multiply, and use forces in such ways as to maximum the "quantity of forces [which] may be extracted from each and combined with the optimum result" (DP 165). This political technology was a "precise system of command" oriented towards "the harnessing, intensification, and distribution of forces" (HS 146). Like a technology organizing a flow of energy to produce a specific result, the disciplines sought to organize the forces of individual bodies, collections of bodies, and the meshings of these bodies with objects and machines to produce specific outcomes.

An efficient mastery of forces was a particular focus of the disciplinary technologies. One of the reasons disciplines replaced traditional forms of power was because they were simply more efficient. While traditional techniques were more costly and wasteful, the immanent mechanisms of the disciplines increased their efficiency by increasing the points of contact with the objects under their control and making surveillance a critical part of the functioning of power (DP 176; DP 206-207). The correlation of the body and the gesture is a good example of this focus on efficiency: disciplinary controls not only enforced particular gestures, but imposed a sequence of actions that established the most efficient relation between a particular gesture and the movements of the overall body. "A disciplined body is the prerequisite of an efficient gesture" (DP 152). Factories, militaries, schools, prisons, hospitals, and other institutions used these disciplinary technologies to achieve higher efficiencies, making systems of

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production, destruction, learning, normalization, and medicine all more efficient, yet their subjects all the more controlled. This emphasis on efficient management of forces was among the reasons Foucault identified these forms of power as technologies.

Artifactual and Generalizable

Foucault also emphasized how these new technologies of power were fundamentally artifactual (embedded within specific material objects and environments) yet were also generalizable from their specific conditions, capable of being diagrammed as abstract blueprints that described ensembles of techniques applicable in diverse situations.

The roles that artifacts play in Foucault has never been appreciated properly. The artifactual plays a particular and pivotal role in Foucault's genealogy of modern systems of power. Foucault's study of early modern European forms of power revealed that certain artifactual innovations played key roles in spurring large-scale transformations in methods of social control. "The fundamental point which Foucault wants to stress concerns the connection of technological innovation to novel power relations. New devices lead to new practices, new observations, new organizations and new knowledge" (Matthewman 2011, 60). Beyond the obvious importance of bodies, Foucault's *Discipline and Punish* includes key roles for production machinery, rifles, cellular spaces, towers, desks, pencils, beds, and clocks. According to Foucault, the disciplines, both individual disciplinary practices as well as disciplines considered collectively, utilized "a multiform instrumentation" and "a disparate set of tools" (DP 26). The use of tools and artifacts, or the design of spaces, were inextricably intertwined with systems of knowledge and projects of control. One of the critical elements of disciplinary technologies was the correlation of the body and the objects it interacted with in specific institutional spaces (DP 152-153). Students were enrolled in a technological ensemble: placed at their desks, supervised through new techniques of observation, judged according to new criteria, taught proper postures of the body, and trained so their movements correlated with the correct method of holding and using pencils. Soldiers were taught how to hold rifles and workers to operate machines; prisoners were confined and managed through their cells and

patients in their beds. Foucault's studies of power were investigations into specific forms of technocratic thinking and practices which emerged from, helped produced, and were in turn sustained by technological devices such as objects, architecture, spatial arrangements, and machines.

While always mobilizing particular artifacts and embedding their operations within specific material environments, the disciplines are also identifiable as technologies for Foucault due to their capacity for generalized replication. For example, the technological ensemble of power that emerged in the military was formulated and condensed into a model that could be disseminated between institutions in different locations and of different types. Foucault also, as noted earlier, makes the connection between technologies and the possibilities of schematizing relations of power in his discussion of the transformations in factories. The disciplinary divisions of labor in factories were in part the product of a projection of disciplinary controls from the military: "the massive projection of military methods onto industrial organization was an example of this modeling of the division of labour following the model laid down by the schemata of power" (DP 218-221). Foucault's discussion of the early models of disciplinary power are also instructive, since these models (in particular the military camp and the plague-infected town) are focused on examples that emphasize the possibilities of abstracting a set of correlations among specific techniques, forms of knowledge, spatial layouts, and artifacts. For example, the military camp served as an 'ideal model' or 'diagram of power' whose principles and procedures informed the construction of housing estates, urban developments, hospitals, prisons, schools, and asylums (DP 171-172). But perhaps the clearest case of this capability of technological modeling of power relations is the Panopticon. The spread of this disciplinary technology depended upon its formalization into transferable schemas. Panoptic principles spread throughout societies as an "elementary and easily transferable mechanism" in part because it could be reduced to a general formulas for the operation of its principles and the construction of its spaces (DP 208-209). The Panoptic diagram constituted a "figure of political technology" detached from any specific application, abstracted from all resistance and friction, reduced to its ideal form, and applicable in diverse situations (DP 205). The Panopticon's architecture, spatial divisions, and specific procedures had polyvalent possibilities for implementation: to reform prisoners, to

treat patients, to instruct students, supervise workers, etc. This generalizability was an essential feature of the technological nature of disciplinary power.

While Foucault is most strongly identified with the notion of 'productive power', it would better to associate him with the notion of 'technologies of power'. His shift towards understanding power as a technology was in part motivated by the positions, scholars, and schools against which he wished to distinguish his own work. Humanist scholars held on too tightly to notions of a human essence constrained by the imposition of techniques and struggling for an authentic, liberated expression. Marxists conceptualized power as superstructural forms of ideology (as a mythical relation to real conditions) and state power (concentrated in one institution). For Foucault, modern power was more complex, diffuse, deeper, and physical than the humanist and Marxist accounts suggested. Power was a complex mix of techniques of control, specific artifacts, spatial constructions, forms of scientific knowledge, and technical applications of such knowledge. Knowledge and power spurred each other on in an endless cycle of production and application. Power invaded the mechanisms of institutions and the mechanisms of bodies, transforming their internal operations into instruments of power. Power was focused on efficiency, making the operations of institutions and bodies less wasteful, less costly, more effective, more productive. It depended on material configurations, yet was capable of being abstracted and modeled. What the opposing schools could not see, and what Foucault identified so clearly, was that this new form of power was best identified as 'technologies of power.'

Machinic Power

In the second half of this chapter I want to explore an additional dimension to this argument. In *Discipline and Punish* Foucault frequently uses the terms 'machines' and 'machinery' not merely as metaphors or suggestive tools of rhetoric, but as real substantive descriptions of new relations and systems of power. This is one of the primary dimensions of his historical analysis of power and it is

indicative of a unique and important perspective on technology and its evolving relationship with society. While Foucault does consider 'technology' as an interrelated set of practices, techniques, knowledge, applications of knowledge, and artifacts, his historical analysis of modern forms of power goes beyond this understanding of technology to articulate a more specific theory of the evolution of power in its relationship to technology. While still just one part of a larger interrelated set of elements that define 'technology', the artifactual and machinic dimension of technology and of power became more decisive for the organization of modern societies. His masterwork *Discipline and Punish* is littered with references to machines, and could well have been subtitled *The Emergence of Machinic Power*. The artifactual increased its influence; more specifically, power became more machinic. "We are much less Greeks than we believe. We are neither in the amphitheatre, nor on the stage, but in the panoptic machine, invested by its effects of power which we bring to ourselves since we are part of its mechanism" (DP 217).

Foucault's argument is not an example of technological determinism, since technological development is not seen as taking place on some autonomous plane and unfolding its effects on the rest of society in a deterministic fashion. Technology and in particular machines have indeed, according to Foucault, increased their importance as the structuring conditions, agents, and models of power; however, this is still happening through the complex, multi-dimensional ensembles within technology itself as well as the complex relations between technology and wider society. The increasing technologization of power relations (and more specifically the increasing predominance of power relations that are constructed in correlation to, mediated through, and organized *as* productive machines) is part of a complex convergence of different institutional projects, problems, and solutions. "In appearance, it is merely the solution to a technical problem; but, through it, a whole type of society emerges" (DP 216). The major transformations begin with the introduction of the rifle into western militaries; a machinic transformation of relations of power soon spread through the factories that were correlating the early modern population explosion and the economic expansions due to new machines; eventually this machinic model of power becomes definitive even in the Panopticon, the disciplinary space par excellence; and in each of these institutions,

and within 'disciplinary machines' more generally, there is a transformation of human bodies into machines organized by power.

Six Key Features of Machinic Power

Each of these will be broken down in turn, but let me start by listing and describing what I identify in Foucault as the six key features of this machinic form of power. While Foucault never explicitly lists these principles or groups them within a single rubric, they are consistently reiterated when he presents the machinic nature of the key techniques, figures, and institutions of disciplinary power.

First, machinic power objectified its components. For Foucault, "the disciplines crossed the 'technological threshold'" when new complexes of power-knowledge transformed instruments of subjection and control into a parallel mechanisms of objectifications (DP 224). The elements, including human bodies, operating in disciplinary spaces were both analyzed and treated as objects; through new forms of knowledge and new techniques of power they were formed into the objectified instruments of institutionally-specific processes of production.

Second, machinic power organized its parts into machinic compositions. Disciplinary power integrated its elements into combinatory compositions that are "a sort of machine with many parts, moving in relation to one another, in order to arrive at a configuration and to obtain a specific result" (DP 162). The elements were treated as divisible segments of a higher or more complex unity ("an efficient machine") in which they played a subordinate role as functions and instruments (DP 164). The disciplines became a "machinery of power" and the elements it organized became the "meticulously subordinated cogs of a machine" (DP 137-138; DP 169). The disciplines answered a pervasive institutional need to "invent a machinery" of power capable of resolving the management problems of early modern institutions associated with increased populations, as well as take advantage of the increased powers of production due to advances in machines and knowledge (DP 163).

Third, the disciplines created machinic bodies and functions by constructing internal constraints in the bodies and relations under its control. Within bodies, the disciplines established calculated

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constraints that ran "slowly through each part of the body, mastering it, making it pliable" (DP 135).

Between bodies relations of supervision were established that formed an "internal part of the production

machinery" in a wide variety of institutions (DP 175). And between bodies and objects, a "body-

machine" was created through a "meticulous meshing" of their relations, a relationality that is not merely

a fastening but rather the construction and regulation of their laws of operation (DP 152-153).

Fourth, as part of the regulation of these laws of operation, there was within the disciplines a

privileging of values associated with the operations of machines. The disciplines were an "ensemble of

minute technical inventions" organized by a meticulous "technical rationality" that sought to achieve high

(and increasing) levels of efficiency, speed, precision, quality, and regularity in order to build the most

productive combinations and to maximize production (DP 218-221; DP 140; DP 149-151; DP 165; PK

119).

Fifth, the operations of the disciplines as machinic forms of power means they were anonymous

methods of power. The pyramidal networks of interrelation, surveillance, and control that developed in

disciplinary institutions functioned as "a piece of machinery" that was both indiscreet due to its

ubiquitous and permanent supervision (even of the 'operators' of the machine) and also discreet since is

mechanisms operated "permanently and largely in silence" (DP 176-177). While certain positions in these

networks predominated, and asymmetrical relations were a rule, disciplinary power was a "machine in

which everyone [was] caught, those who exercise power just as much as those over whom it [was]

exercised"; it was "a machinery that no one owns", a type of power that both integrated individuals and

yet operated independently of any one of them (PK 156).

And sixth, machinic power is productive. Disciplinary institutions adopted machinic

organizational models in order to increase their production (of knowledge, skills, products, force—

whatever the institutionally specific set of useful effects that were designed to be produced) (DP 218).

Central to this was the political and economic project of the bourgeoisie and its "managing to construct

machines of power allowing circuits of profit, which in tern re-inforced and modified the power

apparatuses in a mobile and circular manner" (PK 160-161). This 'technological take-off' in the

productivity of power included the machinic organization and enhanced production not just in factories but in every major institution (PK 119). The development of a machinic form of power was most evident early on with the changes in European militaries.

Military Machine

A massive reorganization of tactics rippled through militaries following the invention of the rifle (DP 162-163). As an instrument of war the rifle was faster, more powerful, and more accurate than its musket predecessor. Suddenly the organization of the military at the level of the individual solider was worth the investment of power; and these investments became required for militaries to take full advantage of their own new offensive possibilities and to avoid the destructive effects available to competing forces. Armies needed to quickly shift towards not only different training models, but new tactical maneuvers that could harness the power of large assemblies of men and organize them down to the most elementary details. Foucault argues the organization of militaries shifted towards "a whole set of delicate articulations. The unit—regiment, battalion, section, and, later, 'division'—became a sort of machine with many parts, moving in relation to one another, in order to arrive at a configuration and to obtain a specific result" (DP 162-163). Shifting away from techniques that organized large populations merely into mobile or immobile masses; instead the military needed to become a machine: the organization of "divisible segments" into a "basic unity" would allow the distribution of military units along mobile, flexible lines composed of machinic, mobile soldiers whose own spatial, temporal, and bodily dimensions would be trained and integrated into the larger military machine (DP 162-163).

The impacts of these transformations went beyond tactical changes. This improvement in the speed, power, and effectiveness of the individual solider increased his value while simultaneously increasing his susceptibility. Foucault notes that the "figures of the soldier" underwent significant changes following the introduction of the rifle and its effects on tactics and training (DP 135). In the early 17th century the solider was still identified through the signs of his dress, his body, and his posture bearing marks of strength, courage, and pride. This was a semiotics of the solider, a "bodily rhetoric" (DP 135).

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But after the machinic transformations of military organization, the figure of the solider was substantially reshaped: the solider himself became constructed and controlled as a machine. The soldier became "something that can be made; out of a formless clay, an inapt body, the machine required can be constructed ... a calculated constraint runs slowly through each part of the body, mastering it, making it pliable, ready at all times, turning silently into the automatism of habit" (DP 135).

The machinic modeling of modern militaries was both a cause of and itself catalyzed by a "military dream of society", whose fundamental reference was not the state of nature that was used by philosophers to conjure the essential nature of the relations between man and the state, but was instead an image of "the meticulously subordinated cogs of a machine", permanent coercions instead of social contracts, enhancements of training instead of fundamental rights, and automatic docility instead of a general will (DP 169). Military theorists dreamt of a military machine projected over the whole of the nation (DP 165); and politicians envisioned the state as a "huge machine" with "a simple, reliable, easily controlled administration" (DP 169). Napoleon was the epitome of this machinic mindset. Foucault cites Napoleon as a critical military-administrative figure. While Napoleon did not invent the disciplinary technologies of power that were spreading through militaries throughout Western Europe, he was an unprecedented organizer and diffusers of these logics. Napoleon sought to construct around him mechanisms of power that would organize by means of rigorous disciplines his army and his state as one "vast machine' (DP 141). Indeed this is perhaps Napoleon's greatest legacy: the transformation of the state apparatus into a structure not only guided by the visions of jurists, councilors of the state, and men of the courts; rather, Napoleon's state was a projection of the military machine that he had helped craft, a state that resembled the large machines being planned out and constructed by soldiers, junior officers, and men of the camps (DP 169).

The Production Apparatus

The innovations in machine technology within factories played a critical role in the development of machinic forms of power. In the space of the factory, disciplinary power "introduces bodies into a

machinery" (DP 210). In the factories the machine proved decisive as a force for transformation, as a central focus of reorganization, and as a model for the changes made. "Thus a new demand appears to which discipline must respond: ... Discipline is no longer simply an art of distributing bodies, or extracting time from them and accumulating it, but of composing forces in order to obtain an efficient machine" (DP 162-164). The disciplines projected onto the workforce the mechanical divisions and articulations of the machines being used the factories as the forces of production; individuals were integrated into the production process as parts of the machine. "The distribution of bodies, the spatial arrangements of production machinery and the different forms of activity in the distribution of 'posts' had to be linked together" (DP 144). The machine was both the model and the primary organizing object within the disciplinary rearrangement of factories. "[T]he technical analysis of the process of production, its 'mechanical' breaking-down, were projected onto the labour force whose task it was to implement it" (DP 221). There was a whole ensemble of new temporal series and spatial distributions of the body in relation to the machine to reciprocally coordinate the capacities and rhythms of the machines and bodies of workers.

In order to distribute these positions and articulate these relationships between men and the machines, the factories adopted and adapted disciplinary methods developed within the military. The machinic models of military organization that followed the introduction of the rifle were imported into the factories as labor regulations. Just as militaries became larger and more complex and the rifle increased the value and importance of organizing the larger masses into combinatory compositions that were greater than the sum of their parts, so too did factories need to integrate individuals into larger forces to maximize production. The new factories required "the constitution of those disciplinary machines in which the individual forces that they bring together are composed into a whole and therefore increased is the effect of this projection" (DP 221).

Disciplines formed a part of the productive machine. In part this was driven by the growing complexity of the production apparatus. "As the machinery of production became larger and more complex, as the number of workers and the division of labour increased, supervision became ever more

necessary and more difficult" (DP 174). Surveillance became an internal and integral part of the production process. More pervasive and detailed forms of surveillance became necessary; more focused and effective forms of judgment were crafted; examinations and repetitive training of workers became required features of the continued and enhanced operation of the productive apparatus. "The development of the disciplines marks the appearance of elementary techniques belonging to a quite different economy: mechanisms of power which, instead of proceeding by deduction, are integrated into the productive efficiency of the apparatuses from within" (DP 218-221). The techniques of discipline in the factories were not only meant to prevent disruptions, thefts, losses, accidents, and organization among the workers, but increasingly as the disciplines were formed, tested, and improved, they became instruments that increased the aptitudes, speeds, and outputs of the individuals and the factory as a whole.

The machinic forms of power that adjusted individuals and populations to the apparatus of production became a model for the reorganization of power relations elsewhere. This form of machinic power was a "specific modality of disciplinary power whose general formulas, techniques of submitting forces and bodies ... could be operated in the most diverse political regimes, apparatuses or institutions" (DP 218-221). These methods did not remain isolated in factories, but diffused to a host of other institutions that enhanced their own forces of production through the construction of 'disciplinary machines'. The machinic power of the productive apparatus and the disciplines within factories generated an economic and political take-off. Societies became more productive not only "in the strict sense, but also the production of knowledge and skills, in schools, the production of health in hospitals, the production of destructive force in the army" (DP 218-221).

Panoptic-Machine

The Panopticon was British sociologist Jeremy Bentham's design for a prison with a central tower covered in darkness and capable of viewing all the prisoners kept in several tiers of cells in a circular ring around the tower. Prisoners were constantly visible and though they never knew whether they were being watched, they had to assume they were at all times. Foucault considered it the example

and diagram par excellence of disciplinary power. The Panopticon too has all the features of a machinic

power as outlined by Foucault: the separation into objectified parts, the interrelations of the cogs into a

larger program, the internal constraints, the focus on efficiency and detail, the anonymity of control, and

the production of specific effects. Foucault repeatedly refers to the panopticon as a machine: "The

Panopticon is a machine", "a machinery," "observation machines," "a marvelous machine," "a machine to

carry out experiments" (DP 173, 201-203).

Foucault compares the operation of the Panopticon with those of a royal menagerie, to which it

bears some resemblance. While both include a detailed arrangement of space, an individualizing

observation, a concern with characterization and classification, in the case of the Panopticon the "animal

is replaced by man, individual distribution by specific grouping, and the king by the machinery of a

furtive power" (DP 203). Within the Panopticon there is a set of mechanisms that transform prisoners

through a "progressive objectification" into instruments of institutional control (DP 173). The prisoner

internalizes the expectations of those in power, those in the central tower monitoring his movements. The

prisoner knows himself to be observed (or capable of being observed at any moment) and so internalizes

the constraints and effects of power, thus playing a role in transforming himself into an internal

instrument of the panoptic machine. Panoptic prisons were a complex machinery that transformed

agitated convicts into functions of power "with perfect regularity"; the criminals were both integrated and

produced by the machine to be its cogs and products; prisons were places not only for confinement, but

also construction: the "making of machine-men" (DP 243).

The Panopticon was a principal instrument in the inversion of visibility that was so significant to

the disciplines. Whereas monarchical societies privileged the king and court as what was to be seen,

modern disciplinary societies inverted the gaze of power towards the governed population and

individuals, and in its extreme forms left the central point of power dark. "The Panoptic is a machine for

dissociating the see/being seen dyad: in the peripheric ring, one is totally seen, without ever seeing; in the

central tower, one sees everything without ever being seen" (DP 201-202). The Panopticon also exercises

an anonymous power. The architectural design (circular, cellular, a central point) is a "machine for

creating and sustaining a power relation independent of the person who exercises it"; in fact, the functions of the machine are dispersed not only among the guards but also the prisons who all are caught up within the "power situation of which they are themselves the bearers" (DP 201). In the case of the Panoptic arrangement, "it does not matter who exercises power" since the system functions like a machine no matter who the individuals are placed within the cells or the tower (DP 202).

The Panopticon is also described as a machinery to conduct a wide range of experiments, depending on the institution, its project, and its targets. The spatial model of the Panopticon made it a "privileged place" to carry out experiments "with complete certainty"; for example, with punishments of prisoners, treatments with patients, techniques with workers, and lessons with students (DP 203-204). The Panoptic machine was abstracted from its particular use as a machinic model of prisons and turned into a polyvalent schema, "a figure of political technology that may and must be detached from any specific use" and put to "whatever use one may wish to put it to" (DP 205; DP 202). The analytical arrangements of space made it possible to produce, classify, and compare differences within and between groups of workers, patients, and students. The Panopticon became an ideal diagram, a general function, a pure system that could be used to produce its machinic operations and effects "[w]henever one is dealing with a multiplicity of individuals on whom a task or a particular form of behavior must be imposed" (DP 205).

Body-Machines

While a lot of attention has been paid to how Foucault conceptualizes the disciplines as a set of techniques which make docile bodies, less has been paid to how critical the role of new objects and machines were to the purpose, model, and product of these transformations in the docile bodies made by power. The disciplinary techniques were a kind of power that operates as a "physical order" that was a "calculated, organized, technically thought out" exercise of "direct, physical ... force against force, bearing on material elements," a "political technology of the body" (DP 24; DP 26). As new machines revolutionized the methods of organization within the army and the factory, and these new machines provided both the spur and model for these transformations, the bodies of individuals were integrated into

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the new machineries of power. With the emergence of the disciplines, the "body is constituted as part of a multi-segmentary machine" (DP 164). The new mechanics of power broke down the body, explored it, and rearranged it through technical supervisions, manipulations, calculations, and recombinations to produce more useful and submissive subjects (DP 137). The body itself came to be considered a machine.

The new techniques of power established themselves within the operation of the body, they established a constricting link within the body itself, in how its elements related, in how it moved, it how it connected to objects and other bodies. While in every society power grips the body and imposes obligations, constraints and/or prohibitions, the disciplines constituted a unique set of techniques. This machinic perspective on the body is reflected in the three "new things" about disciplinary techniques' "meticulous control of the operations of the body" (DP 136-137). The scale of control shifted from treating bodies as wholes with an indissociable unity to breaking the body down into its basic elements through a discreet and subtle coercion that invested these elements directly in order to create more detailed and tactically efficient holds over the body's own mechanisms. The object of control shifted from the significations and rhetoric of whole bodies to the operations of a set of internal, efficient organizations of the body's economy of forces. And there is a shift in the modality of power, from discontinuous forms of control to modes of constant supervision and coercion. In his schematic presentation and differentiation of the disciplines from biopolitics in his *History of Sexuality Vol. I,* Foucault stresses the disciplines transformation of bodies into machines. Disciplines analyzed and manipulated "the body as a machine: its disciplining, the optimization of its capabilities, the extortion of its forces, the parallel increase of its usefulness and its docility, its integration into systems of efficient and economic controls, all this was ensured by the procedures of power that characterized the *disciplines*" (HS 139).

One of the most interesting moments in Foucault's articulation of this new machinic organization of the body is his discussion of body-object articulations (DP 152-153). In the institutions emerging in the early years of the disciplines, the body was coming into contact with more objects and machines (and more complex objects and machines) that played an increasingly important role in the organization and operation of the institution. In order to manage and take advantage of these new multiplicities of bodies

and objects, the disciplines outlined a "meticulous meshing" between the body and the objects it interacted with, breaking down and rearticulating "the relations that the body must have with the object that it manipulates" (DP 152-153). Gestures are broken down into parallel series governing the sequence of placements, relations, and movements of the individual parts of the body and specific objects or parts of objects. "Over the whole surface of contact between the body and the object it handles, power is introduced, fastening them to one another. It constitutes a body-weapon, body-tool, body-machine complex" (DP 152-153). This kind of power is primarily a form of control of the operations of the body rather than a primarily an appropriation of a body's signs or the product of its labor. It establishes a set of coercive links within the constant reconstruction of the body and as well as coercive links between this machinic body and the apparatuses of production of particular institutions.

Foucault is not normally considered a scholar of machines; but a close reading of his analysis of power suggests otherwise. For Foucault, the machine was at the core of the distinctive reading of modern power for which he has become rightly famous. In *Discipline and Punish* Foucault traces the emergence not only of a new 'technology of power', but also within this new technology, as perhaps its most definitive dimension, a form of machinic power that spread along with (or within) the disciplinary technologies. The technologies of power and this machinic power are not distinct; machinic power is a kind of emphasis within the disciplines, a definitive tendency that shaped some of the most important objects, instruments, dynamics, and institutions whose collective transformations produced the disciplinary age.

Conclusion

By way of a conclusion to this chapter, I would like to briefly outline what I consider are four of the key consequences of this technological- and machine-oriented reading of Foucault.

First, I intend this as a contribution to the small number of publications that have examined Foucault as a scholar of technology and argued that understanding his views on technology are central to

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understanding his work. It is surprising to find out how rare it is for someone to analyze or use Foucault not for the sake of understanding how his theory of power applies to a specific technology, or how his account of a specific figure like the Panopticon is still applicable or not applicable to a contemporary system of power; but to study how Foucault conceptualized technology, what its main features are for him, what analytical work it does in his historical studies, how he envisions its relation to his formulation of power, and how he sees these evolving over time. Even in the literature that explores Foucault as a scholar of technology there is very little textual engagement, at least nowhere near the breadth and depth that is possible considering the central role of technology within his theory of power and *Discipline and Punish* in particular. Insisting on technology as one of the central features of the framework of Foucault hopefully provokes creative returns to Foucault's work to explore the function and importance of technology within his studies of power.

Second, to reiterate a point made within the body of the chapter, I think Foucault's analysis of 'technologies of power' is even more important than his formulation of power as productive. In part this is because I think the concept of 'technologies of power' includes the notion of its productivity, but has the further advantage of laying out a series of key additional variables of Foucault conceptualization of modern forms of power. Technologies of power helps draw a series of distinctions between Foucault's work and that of other schools and scholars; it more fully explains why new disciplinary forms of power were sought out and eventually replaced traditional forms of power within institutions and society in general; it incorporates the dynamics of mutual constitution between power and knowledge that not only makes this relation historical but emphasizes its role in constructing disciplinary power as a form of technology; it adds critical specific features of modern power as Foucault describes it (physical, forceful, efficient; and while it recognizes the key capacity of disciplinary arrangements to be diagrammed and instantiated in multiple institutions, it also insists on the material tools and embedding that make disciplinary power possible. Some of these variables and features are frequently overlooked in studies of Foucault, as are the interrelationships between them all. A focus on 'technologies of power' as Foucault's central argument instead of 'productive power' may help change that.

Third, Wolfgang Hofkirchner (2010) provides a basic but useful distinction between four archetypal positions on the question of the relations between technology and society. The four main positions are a reductive techno-determinism, a projective social constructionism, a disjunctive postmodernism, and a integrationist mutual-shaping. In techno-determinist approaches, new informational and communication technologies drive the creation of informatized environments, economies, politics, and/or cultures. In social constructionist approaches, an informational environment, economy, politic, and/or culture drives the development of new information technologies and their uses. In postmodernist approaches, there is no causal or identifiable relation between the creation of communication and information technologies and specific cultural, political, environmental, and/or economic formations. In the mutual-shaping approaches, information and communication technologies both shape and are shaped by economies, cultures, politics, and environments in which they emerge and operate. Hofkirchner places a diverse set of scholarship on technology within different boxes of this schema; in particular he places work on contemporary surveillance societies within the social-constructionist approach (with a 'political' emphasis) and places work on 'simulations' (Baudrillard 1994; Bogard 1996) in the techno-determinist camp.

What interests me about this schema as it relates to Foucault as a scholar of technology, and his account of technologies of power within *Discipline and Punish*, is that while he would be squarely placed within the mutually-shaping camp, his work also suggests an increased prominence of the technical, technological, and machinic. His position is, in principle, mutually-shaping; yet historically this relation can be seen as evolving towards more 'progressive' (that is, more pervasive and intensive) forms of technological restructurings of society. As part of specific political-institutional projects, as part of society-wide transformations of power, technologies of power can be seen as becoming more predominant according to the work of Foucault. In the very least, taking Foucault seriously as a scholar of technology makes clear that his work is capable of informing a unique position and perspective on the past, current, and future relations of society and technology.

Fourth, one of the most influential glosses and updates of Foucault's work on surveillance and disciplinary power is by his good friend Gilles Deleuze in his essay "Societies of Control" (Deleuze 1995). What is remarkable about this essay is how central technologies and machines are to Deleuze's understanding of Foucault, and not merely in his updating of Foucault's argument for the contemporary digital age. Deleuze claims that there is a "correspondence between any society and [a particular] kind of machine, which isn't to say that their machines determine different kinds of society but that they express the social forms capable of producing them and making use of them" (Deleuze 1995, 180). He argues that Foucault's disciplinary societies corresponded to thermodynamic machines while the new control societies that have replaced them correspond to cybernetic machines. I think this is a really suggestive insight, and while I would push this argument in an even stronger direction, I believe Deleuze deserves credit for being among the few scholars to point out how critical machines are to Foucault formulations of disciplinary power.

But I think the account provided in the current chapter supports an even stronger role for technology and machines than even Deleuze provides. The machines and technologies of power analyzed by Foucault in *Discipline and Punish* suggest a stronger relation to their society than a relation of 'correspondence', and machines play a more pivotal and more determinative role than what Deleuze means by 'expression.' For Deleuze, that machines are expressions of social practices makes them derivative of these more fundamental, more decisive dynamics. They are an expression of something more basic. Yet machines in Foucault play structure social relations to such a degree than describing them as derivative of these does not capture the intention and substance of Foucault's formulation of a 'machinery of power.' These societies were becoming more technological, and more machinic. Indeed, in Deleuze's own account I believe we can see a sort of parallel but delayed argument: his formulation of control societies is deeply intertwined with an account of the increasing number, specific type (digital and cybernetic), and particular capabilities of new technologies. These new technologies provide him with the key models and dynamics to describe most of the key features of this new form of power. To my mind

this indicates a much stronger relation than merely correspondence, and this much stronger relation between technologies, machines, and society was already articulated by Foucault.

Book Review: How to Read Foucault, by Johanna Oksala, Granta Books, 2007

French philosopher Michel Foucault once speculated that the figure of man would one day be erased "like a face drawn in the sand at the edge of the sea." Perhaps then there is at least a little irony that as the sands, waves, winds, contours, and shores of our age have shifted so dramatically the last several decades since his death, the figure of Foucault remains so stark and strong in contemporary thought. His work on productive power, power-knowledge, disciplines, biopower, biopolitics, modes of subjection, and aesthetic ethics remain among the central references for much of the theoretical and empirical output of the 'critical academy'.

This centrality persists despite two significant discontinuities that at least suggest the possibility of a relative decline of his relevance over time. The first discontinuity is one within his work. From early philosophical work influenced by phenomenology and Heidegger, to early forms of what would become 'critical science studies', to language-focused formulations within his 'archaeology' period, to his analysis of institutions and techniques of power within his 'genealogy' phase, to the late work on the ethics of antiquity, Foucault was never afraid of making sharp breaks with earlier formulations, revising his core framework, and fine-tuning his evolving claims to a consistent, central focus. While such an evolution has in part helped spur debate around his specific works and their interrelations within his project as a whole, the discontinuity has also raised the issue of the uneasy (and even contradictory and mutually exclusive) relations among his different works. As each new stage of his work appears to be deeply critical of the preceding ones, it can be difficult to decipher the positive relations between them or what remains alive and relevant in the earlier work. Yet these discontinuities have not undermined Foucault's position in the contemporary critical canon. His work supports a small industry of publications, many of which advocate for a particular period of his work as ultimately preeminent.

Scholars from a wide array of fields have found different dimensions of his work to be productive platforms for their own studies.

A second discontinuity, which the work of Foucault has also weathered well, is the transformative emergence of microelectronics, software, and digital media. These new technologies have profoundly reshaped contemporary institutions, systems, and life generally. Foucault's work, in particular his most influential publication, *Discipline and Punish*, seems to be so marked by its focus on regimes of power from the classical and modern periods, that its application to an age of cybernetic machines, big data, ubiquitous interfaces, networks, and mobile technologies would seem at the very least to be an open question and quite likely of limited relevance. Even his close friend and legacy defender Gilles Deleuze suggested, in his own essay on contemporary systems of power titled "Societies of Control," that Foucault's account was focused on an age of enclosed institutions, thermodynamic machines, and fordist modes of capitalism, and that a new age of power was emerging and new tools of analysis and resistance were needed. Yet Foucault's work on power, disciplines, biopolitics, and biopower have remained influential for many scholars seeking to develop updated schemas for studies of changes in workplaces, medicine, policing, social media, urbanism, and militaries among other fields. Foucault has persisted as a central reference for these studies despite systematic transformations in contemporary relations of power.

*   *   *

It is not a surprise, then, and even a welcome publication, to find Foucault added to the growing list of theorists included in a series of *How to Read [Insert Theorist Here]*. Johanna Oksala's *How to Read Foucault* is a smart, sharp, slim volume that provides both a quick and incisive presentation of many of the core arguments of Foucault, with some surprising inclusions and supplements. According to the introduction from series editor Simon Critchley, the primary objective of the works in this series is to serve as beginner's guides that dispense with the conventional inclusion within introductions to theorists of biographical and larger contextual material in favor of positioning readers "close to the words" of the theorist and showing how to read those words, supplying "a masterclass in reading" through a selection and explanation of extracts meant to reveal central ideas (ix). Rather than a comprehensive account or

definitive reading, then, this series aims to serve as a provider of "key and clues" for readers to begin their own explorations of the author's work and "make discoveries of their own" (ix).

This fits well with a tendency in Foucault himself, one strongly emphasized by Oksala, towards a strategic and political approach to engagement with and use of theory. Foucault's concepts, argues Oksala, should be seen as a 'tool-box' for "imaginative and new uses" and the construction of "new forms of thinking" for "no lesser reason than in order to change the world" (1). A key part of Foucault's project of exposure and instigation is a recognition, by the intellectual, of their own contextualized position. As a "specific intellectual" one must speak from a specific position within specific contexts of power and ongoing struggles. For this reason, Oksala explains, Foucault as a philosopher-historian carried out multidimensional "histories of the present" in order to show how it is we became who we are. Such histories attempt to 'de-naturalize' present conditions, revealing how what are often in a biased way depicted as natural or biological facts are actually the frequently haphazard and always contingent (in their origin and continuation) products of human history and culture. What people perceive as necessities in fact have "emerged out of a network of human practices" (10).

Foucault practices philosophy not as the revelation of metaphysical truth, or the determination of the foundations of logic and mathematics, or the deconstruction of canonical texts, but rather as a critical practice. This critical effort is double sided. On one hand, Foucault refuses final answers for the sake of a relentless questioning of dogmatic belies and intolerable practices. Central to this critical philosophical questioning is a critique of philosophies of the subject—those that privilege the subject and claim all knowledge conforms to human faculties—as well as a genealogy of modern subjectivity, an investigation into the "history how people are constructed as different types of subjects" (15). Foucault shifts philosophical and historical attention away from a human subject considered as "an autonomous and transparent source of knowledge" towards the "networks of social practices" made of "power relations and exclusions" that constitute and define individuals as delinquents, deviants, homosexuals, mentally ill, as well as the privileged obverse of safe, normal and healthy (15). This includes studying the looping effect between relations of power and systems of knowledge as, for example, where medical discourses

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such as psychiatry play a constitutive role in determining who is sane and insane, normal and abnormal. The second side of this project, argues Oksala, is how these denaturalizing histories and critical philosophical practices "liberate us by making alternative ways of thinking possible" (8). Foucault helps his readers think differently about what appears inevitable and think creatively about alternative possibilities. The reader of Foucault can see their culture as intolerable yet contingent. Oksala argues that for Foucault, "The role of the intellectual is to expose new ways of thinking: to make people see the world around them in a different light, to disturb their mental habits and to invite them to demand and instigate change" (8). Foucault's work, then, says Oksala, is a provision of conceptual tools for people to use in their own specific, situated struggles.

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While in many interviews and within *The Archaeology of Knowledge* Foucault explicitly tried to distance his work from the tenets of structuralism, nonetheless, his work (especially pre-*Discipline and Punish*) bears strong imprints and numerous parallels with structuralism. Structuralism, a body of thought prominent at the time of Foucault's *The Order of Things* and *The Archaeology of Knowledge*, attempted to explain social and cultural phenomenon in terms of underlying structures that were non-historical and unconscious. Ocala rightly emphasizes that the major claims in *The Order of Things* is a structuralist argument: there is a level of order below the consciousness of scientists that consists of the organizing principles of knowledge, 'a positive unconscious of knowledge' as Foucault puts it, that is formative of scientific discourses (27). These unconscious 'epistemes' consist of rules that define proper objects of study and the necessary conditions for forming concepts and building theories. Oskala explains that for Foucault it was pivotal to understand these epistemes as generative, regulative, and non-subjective: "He wanted to study the history of science as a relatively autonomous field of discursive unities, regularities and transformations without positing the intentional subject—the scientists—as the principal explanatory factor" (29). They were anonymous structures that both made it possible for and placed specific limits on individual perception and thought.

Yet one of the consistent features of Foucault's work in this period that does distinguish it as an unorthodox style of structuralism, was its focus on the historical variability, specificity, and evolution of these epistemes. Rather than foundational, non-historical structures (found in other structuralist theorists such as Levi-Strauss and Jacques Lacan), Foucault's epistemes underwent profound epochal shifts—complete reorganizing of their fundamental formative conditions and constraints. While his "aim was not to provide causal explanations for changes in history" but only "to describe certain transformations in deep structures of thought," his arguments were fashioned with a purpose of arguing against the notions of a continuous development of European science and modernity. While he himself never articulated the multiplicity of complex causes for these shifts, his account makes clear that these changes were not the product of consistent improvements. Epistemic shifts are fundamental breaks, discontinuous ruptures and transformations of the basic levels of knowledge production. Foucault identified three major sequential epistemes: the Renaissance, the classical, and modernity. His identification of Man as the problematic core of the modern episteme—finite and knowing Man as the circular ground and object of knowledge—has been particularly influential.

Oskala makes an interesting argument about the political purpose of Foucault's archaeological work. She argues that Foucault's archaeological work on past epistemes was intended to make us aware that we are trapped in our own episteme, but we are capable of becoming aware of its presence and limits. Foucault's archaeological work can "make us realize there are hidden structures underneath our own order of things and to experience their fragility" (34). Foucault's histories of the present are not merely intellectual projects to better understand the past, but to confront contemporary readers and force them "to undergo an experience that challenges the self-evidence of our own modes of thought" (35). The conceptual necessities of our period can become malleable contingencies. By distancing the reader from his or her own cultural construction, dominant forms of thought can be questioned, and previously 'impossible' ways of thinking can be provoked and cultivated.

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Somewhat contentiously and contradictorily, Oksala argues that while in order to develop his own genealogical method Foucault "selected from Nietzsche some key elements that became decisive for his own thought," it is also true that "the essential element of Foucault's thought did not change with the introduction of genealogy" (47, 54). Yet she also points out that critical to Foucault's genealogical project—a project intended to reveal the historical sequences and particular social constructions of dominant forms of power—was a reconceptualization of the nature of power, the relations between power and knowledge, and methods of subjectivation. "His major claim was that being a subject, a socially recognized individual with intelligible intentions, desires and actions, was only possible within the power/knowledge networks of a society" (58).

Foucault rethought the concept of power, criticizing models that depicted it as a possession and emphasizing instead that power was a relation, an action, an exercise. "Foucault's rethinking of power was specifically targeted against liberal and Marxist conceptions of power" (66). It was not a possession held by a class or an individual (whether king or citizen) and it couldn't be broken down into a simply economic dualistic antagonism. Power is a network of relations throughout the social body. According to Oksala, Foucault argues that to best study these networks of power, one should not start at the center, or at specific individuals or institutions, but rather focus on the 'microphysics of power' occurring "on the extremities: families, workplaces, everyday practices and marginal institutions. One has to analyse power relations from the bottom up and not from the top down, and to study the myriad ways in which the subjects are constituted in different but intersecting networks" (67).

Foucault's development of the concept 'power-knowledge' indicated he was no longer focused on studying the internal generative and regulative rules of scientific discourse, but was now interested in the recursive connections between forms of knowledge and relations of power, or how the sciences both facilitated and were facilitated by their intertwining with power relations, particularly in institutional settings. Systems of knowledge were seen as validating certain procedures of control; and particular procedures of control contributed to the development of scientific knowledge—for example, the intersections between medical psychology and the control of inmates at asylums. As Oksala puts it, "He

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understands their relationship as internal: the social and political context of scientific knowledge also shapes the context of scientific knowledge itself" (49). Forms of knowledge were still seen as operating according to specific rules and constraints of a given discourse in a particular period, but these rules and constraints were part of a larger, non-discursive social practice in which scientific knowledge was used an instrument of power.

Foucault's most important genealogical study was of the spread of surveillance mechanisms throughout society. The 'panopticon'—named after a prison designed by the English sociologist Jeremy Bentham—was a model of power whose essential elements—invisible guards, always visible prisoners, systems of documentation, and constant examination—Foucault identified as present in numerous institutions of modern society including schools, hospitals, factories, and prisons. These practices of surveillance and their attendant forms of judgment and punishment were new forms of power-knowledge: new forms of surveillance made possible more detailed and accurate knowledge of subjects and this "new knowledge strengthens the effects of power by offering new applications for devising ever more detailed and subtle ways of shaping ... behavior, desires, aims and experiences" (57). New sciences helped define correct forms of behavior; and the monitoring and imposing of these forms of behavior produced ever more knowledge of the subjects under control. Subjects internalized the norms imposed by power, adjusting their behavior in response to rewards and punishments, eventually approximating the identities and routines enforced by power.

Foucault's other prominent genealogical study focused on sexuality, or how sexuality became an object of power through the blending of medical, juridical, and psychological discourses along with the secularization of confession techniques. Foucault explains that in contrast to commonly held positions that the social conventions of bourgeois morality and the capitalist economy repress or inhibit the true sexuality of people, there is actually no true sex, no natural or foundational sexuality that we should struggle to free. Rather, sexuality is simply another historical construct that has been naturalized in order to normalize specific identities and behaviors. Thus any mission to liberate ourselves from repression is itself fundamentally misguided.

For Oksala, Foucault's genealogical project was not meant to denounce particular practices or propose specific alternatives, but instead to provoke questioning, to make visible and historicize power relations as social constructions "in order to radically question the timeless and inevitable character of practices and forms of thinking" (48). While he did engage in explicit moralism, the style of his thought and the examples he chooses communicate, claims Oksala, a set of political implications and moral judgments. He intended his work to shock his readers into refusals and provoke them to seek alternatives. The ones needing to be free are not simply those populations that he focuses on, but all of us. "The aim is to 'liberate' not only marginal groups such as the mentally ill and the imprisoned, but also the rest of us, by showing the contingencies at play in the formation of what we hold as inevitable, scientific truths" (54).

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In addition to these accounts of archaeology and genealogy, Oksala also explores the aspects and relations between Foucault's conceptualizations of resistance, critique, ethics, experimentation, and freedom. For Foucault, resistance is as ubiquitous as power, serving as its unstable underside and as a form of incessant displacement and dysfunction. Power and resistance are tightly intertwined and their co-constitution makes both of them non-deterministic in their effects, dynamic in their evolutions, and uneven in their distributions. For Oksala, Foucault's preferred forms of resistance are critique, ethics, and experimentation. Endorsing a particular dimension of the Enlightenment—its "dare to know" motto from Kant, Foucault conducted and supported a practice of "permanent critique," which risks danger and reprisal in order to "expose and critique the political rationality that ... underlies power of the modern state" (86). It also means criticizing more generally the governing practices and frameworks of knowledge that inhibit freedom throughout society, not just the techniques employed by the state. Along with this critique of power, Foucault's late work articulated a more positive conception of resistance: ethical practices of the self. Foucault drew upon ethical practices from Greek and Roman antiquity to emphasize the possibility and potential of a subject creatively shaping itself. Subjects consist not merely of whatever is natural or imposed; rather, this practice of self-stylization takes advantage of opportunities

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to create and experiment with new and unique experiences, relationships, bodies, and thoughts. Lastly, Oksala draws attention to another less well cited celebration of experimentation in Foucault: his early work on experimental literature. Oksala argues that Foucault's analysis of literature is intended to reveal how such a practice can put us in touch with "the unreal and the irrational," help us make contact with the "infinitely rich" and "anonymous nature of language," and help us "transgress the limits of our ordinary concepts and experiences" and begin to "think and experience the world in new and creative ways" (43-44). However, as Oksala notes, Foucault did not have grand visions or hopes for these practices of resistance, critique, ethics, and experimentation. While he was optimistic and strongly advocated for transformations in the direction of 'freedom'," as Oksala puts it, he was decidedly against any achievement of an "overall liberation," instead focusing on "particular emancipations" from historically specific techniques and relations of power (90; 69).

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Though Oksala's introduction to Foucault is a pithy, energetic, and highly readable presentation, her account does raise a few questions and contain a few flaws. A couple questions for Oksala refer back to the two discontinuities this review considered at the beginning. In explaining the relations between the different period's of Foucault diverse output, Oksala appears to suggest a sort of teleological, vaguely Hegelian explanation for this evolution: "The introduction of a 'new' phase was rather marked by the introduction of a new axis of analysis that resulted in a more comprehensive view" (3). Such a perspective on the development of Foucault's thought simplifies the sharp discontinuities and problematic relations between these periods, in particular complicated and clearly very critical tensions between archaeology and genealogy within Foucault; it also misses how insights and orientations from earlier work such as *Madness and Civilization* are dropped for a time and then later picked up and further developed; and it privileges later work that is not always as comprehensive, rigorous, and important as earlier work, for example the unfortunate (at least in this reader's mind) late diversion into studies of Greek and Roman ethics.

A second frustration with the book is in relation to the second discontinuity relevant for contemporary work on Foucault: the sharp break between disciplinary power analyzed by Foucault and the transformations of systems of power due to new information and communication technologies. According to Oksala, "We live in a disciplinary society in which .... disciplinary power takes the more technologically sophisticated form of automated cameras, electronic barcodes, and monitored calls, but the operative principles remain the same" (57). Oksala projects the disciplinary schema into the present without consideration of the many analyses that have demonstrated a need to rethink contemporary power beyond disciplinary frameworks. According to Deleuze, Foucault himself recognized such a need. Dramatic transformations in technologies, techniques of power, and institutional operations should force us to rethink the legacy and utility of Foucault within these new conditions, rather than merely reapplying in the present his historically specific analyses of the past.

A few other limitations should also be noted quickly. The format of the book, treating Foucault's work sequentially, is perhaps helpful for readers to be introduced to Foucault's oeuvre and gain a sense of the development of his thought, but the sequencing has the unfortunate drawback of overlooking key influences and overlaps between texts. For example, the theory of power within *History of Sexuality Vol. I* underlies the historical analyses within the earlier *Discipline and Punish*, while the *Archaeology of Knowledge* formalizes the theoretical framework of the earlier archaeological studies. There are also some undeveloped discussions of key points in Foucault, including very short shrift given to the concepts of 'double conditioning', which Foucault uses to explain how emergent forms of power react back on lower levels; and 'biopower' and 'biopolitics', which admittedly are not treated in great depth within the books discussed, but whose outsized influence justifies a more lengthy and detailed engagement. Lastly, Oksala's repeated description of Foucault as a kind of social constructionist overlooks the many critiques made by Foucault of such a discourse-centric paradigm, as well as the key role of such terms as bodies, forces, elements, life, and the non-discursive in his work.

At one point Oksala, in a discussion of the influence of Nietzsche on Foucault notes that Foucault "made it clear that he was more interested in using Nietzsche for his own purposes than in

following him faithfully" (47). Somewhere in his own book on Nietzsche, Nietzsche's great translator Walter Kaufman draws this ethos out of Nietzsche's own encouragement to his readers: to be Nietzschean one would have to not be Nietzschean. Perhaps the same can be said for Foucault. To truly be influenced and informed by his work a reader would have to transform Foucault for their own purposes, to diverge from Foucault out of a debt to him. It is this that makes an introduction such as Oksala's such a difficult project, especially just to the extent that it recognizes and emphasizes this aspect of reading Foucault. "Imaginative and new uses of his toolbox are essential goals when reading his work" (1). Oksala does a fine job with a basic presentation of some of the established understandings of Foucault. But for How to Imaginatively Reread or Use Foucault, we would have to look elsewhere.

Chapter 3: Variegated Power: Reading Foucault Through Peck, Brenner, and Theodore

One of the frequent refrains found in the scholarship on Foucault is that his work is a tool-box of concepts that readers can take up and use for their own purposes in their own situations to confront and challenge systems of power. There is no doubt some truth to this. For Foucault, all knowledge is in a fundamental sense strategic, as it is always a product and tool (of imposition and transformation) within a system of power. But one of the major drawbacks of the tool-box image is that it contributes to a perspective on his work that is static. If his concepts and arguments are tools, then they are well-defined, they have specific functions, and when we need them we can turn to him, cite his ideas, apply them in our work and to a particular problem. The tool-box image suggests and supports a mechanical approach to Foucault.

This chapter's examination of the intersections, overlaps, and some of the key differences between the work of Foucault and Peck-Brenner-Theodore is motivated by an interest in seeing Foucault's work as still *alive*. By this I mean not only that it is still applicable to contemporary phenomenon, that, for example his work on the disciplines is still relevant for understanding how soldiers, students, and factory workers are trained. I do believe that is the case. But what I mean in addition to this is that Foucault's work, and our relationship to it, is still evolving. As we are forced to ask and answer new questions about how power operates, as we are faced with new sets of problems (both as a society and as scholars), as we come in contact with new ideas, or confront new needs, we can return to the work of Foucault and read him in new ways. Our conversation with Foucault can grow and change.

The work of Jamie Peck, Neil Brenner, and Nik Theodore on variegation is, I believe, uniquely positioned to play a role in the changing conversations concerning Foucault's ideas and continuing relevance. Their work responds to the need to analyze some of the most important changes in political

economics: the transition from Fordist capitalism to neoliberalism, the geographical diffusion of

capitalism, the changing relations and actors among the multiple geographical scales of capitalism, and

the persistent and even intensifying contestations, contradictions, and crises of contemporary economies.

In addition their work draws upon a wide range of other scholarship. Their ability to synthesize insights

from a variety of literatures, such as historical materialist political economy and anthropological studies

of localized capitalist practices, places them in a conversation with some of the most interesting work

being done in multiple disciplines, including political economy, economics, anthropology, political

science, and geography. Especially geography: their focus on spatial dynamics—from the multiple scales

of systems of power, to the influence of local contexts, to the geographical dimensions of policy

diffusion, to their sheer conceptual creativity in discussing how power and space intertwine—put them at

the forefront of discussions of the geographies of capitalism, and the *changing* geographies of capitalism.

But what is most interesting about their work for me, as someone working within the lineage of

Foucault, is how their work contributes to studies of power beyond just political economics. While their

work is focused on studies of capitalism and neoliberalism, I think it is possible to see at the core of their

work a framework or a set of principles that can guide the study of systems of power generally. If one

were take their work on variegated capitalism, variegated neoliberalism, and variegated urban

neoliberalism as well as their work on policy diffusions, and strategically strip it of its political economic

particularities, a set of principles can be discerned that are nowhere articulated as such in the their work,

but are definitely present and, in my opinion, of wider significance than their own work explores, a

significance for contemporary geographies of *power*, the much changing geographies of power.

This chapter describes some of these key principles of power that I think can be derived from the

work of Peck-Brenner-Theodore and uses them as guides to reread Foucault. This rereading reveals or

emphasizes aspects of Foucault's account of power that have been too often overlooked or

underappreciated in the secondary literature that comments on or uses his framework for studies of power.

I also note the various ways in which the work of Peck-Brenner-Theodore as exemplified by these

principles can provide some key supplements to the work of Foucault, adding new concepts or directions

of study to improve analyses of contemporary power. Reading Foucault on power through the lens of variegation provides a conceptual update and sharpening of his work and provides an outline for future studies of 'variegated power'.

The five basic principles of power I derive from the work of Peck-Brenner-Theodore are as follows: 'antagonistic embedded emergence' (how systems of power emerge in the context of opportunities in specific locations and how the current context, as well as an extended conflict with the previously dominant regime, shapes their spatiality and long-term trajectory); 'uneven multi-path diffusion' (localized techniques spread to new locations through networks of policy actors, along complex spatial and temporal pathways, and have contextualized and complicated impacts on their new locations); 'local institutional polymorphism' (the operational features of institutions of power differ depending on their geographical locations); 'mutating meta regimes' (lower level dynamics interconnect and become 'parameterized' by flexible 'supermodular rule regimes'); and 'path dependent reinvention' (systems of power evolve within specific contexts due to a fundamental openness, degrees of experimentation, and provocations from contestations and crises). In the interest of time, in this chapter I focus on how three of the key principles (antagonistic embedded emergence, uneven multi-path diffusion, and path dependent reinvention) can be used to conduct a rereading and supplementing of Foucault

Reading Foucault with and against these principles allows for new emphases in the consideration and appropriation of his work, for example: focusing on the conditions of emergence of new relations of power in particular institutions; the complex spatialities, temporalities, and institutional logics involved in the diffusion of new techniques; and the critical role of experimentation, dysfunction, and innovation in the operation and evolution of systems of power. For each of these principles, I formulate a composite Rule out of elements from rereading Foucault's work through a variegated lens and the supplements from Peck-Brenner-Theodore. These three rules are modeled on Foucault's own four rules for studying relations of power articulated in his chapter on 'Method' in *History of Sexuality Vol. I*: Rule of Immanence, Rule of Continual Variations, Rule of Double Conditioning, and Rule of the Tactical

Polyvalence of Discourses. The new rules I provide in this chapter are not meant as replacements, but as additions that extend, modify, and supplement Foucault's original rules.

Antagonistic Embedded Emergence

Much of the secondary work on Foucault, or analysis working within his lineage, focuses on the historical sequencing, major operational distinctions, and defining features of each regime of power, in particular those of disciplinary power. Comparatively little analytical attention is paid to the processes, temporalities, spatialities, and consequences of the transition between regimes. In part this accurately reflects the dominant emphasis by Foucault on identifying and presenting the core features of an epoch-defining modality of power; and partly this reflects the primary use of Foucault's analysis of power as a template for analyzing historical and contemporary forms of disciplinary power. However, reading Foucault through the lens of variegated power can help enrich our understanding and appreciation of moments in his texts when he discusses the complicated dynamics of the decline of one regime and the emergence of another. A variegated perspective can also help illuminate possibilities for conceptual supplements from variegated studies that can extend and deepen Foucauldian accounts of emergent formations of power.

One of the major contributions of the work of Peck-Brenner-Theodore is calling attention to these transitional moments as instructive not only for the sake of understanding process of transition between regimes, but for them these moments of transition have long-lasting, formative effects on the ascendant regime. Within their work on transitions between Fordism and Neoliberalism, I see a principle operating that I believe is applicable within studies of power generally, and is particularly useful for rereading and reworking Foucault. I call this principle 'antagonistic embedded emergence.' According to this principle, the emergence of a new ensemble of rules and regulations is often a battle between two competing regimes in conditions of vulnerability, crisis, collision, and opportunity. Conditions of emergence are complex and fraught with challenges for all actors. Regimes of power emerge not in conditions of their own choosing. They must struggle to replace their predecessors; they must prove their worth as superior

solutions to pressing problems; and this struggle is not only constitutive of how they emerge, but also of their geographically and institutionally specific features and their longer-term evolution. Peck-Brenner-Theodore distinguish their position from accounts of Neoliberalism and Neoliberal urbanism that depict these economic formations as emerging fully formed, cohesive, and consistent across cases, and as operationally autonomous sequential replacements of the previous Fordist regime. For Peck-Brenner-Theodore, the regimes of power do not descend and diffuse and unfold in a top-down, linear, or homogenous fashion. Neoliberalism bears the marks of its antagonistic collisions during its emergence in specific, diverse, and often hostile conditions.

Returning to the work of Foucault with this principle in mind, several moments in his analysis gain a new prominence. By connecting the conceptually rich descriptions of these dynamics by Peck-Brenner-Theodore with some parallel aspects of the analysis of power and disciplines conducted by Foucault, we can see how a notion of antagonistic embedded emergence both echoes and extends Foucault's account and makes possible an improved Foucauldian articulation of the processes and importance of transitions between regimes of power.

Echoes in Foucault: Antagonistic Embedded Emergence

Rereading Foucault through a lens of a principle of 'antagonistic embedded emergence' reveals several important dimensions of Foucault's own analysis of how, where, and why new regimes of emerge. Echoing Peck-Brenner-Theodore, Foucault examines how new ensembles of techniques emerge from dispersed, localized conditions and form as reactive responses to institutionally specific problems as well as larger systematic disturbances.

Peck-Brenner-Theodore crafted their arguments about variegation as part of an examination of the breakdown of the Fordist regime of capitalism and the emergence of neoliberalism as a successor regulatory project. They emphasized that the wider systematic breakdown of the Fordist regime presented opportunities for new ideas and new projects to emerge as competitors and replacements for Fordist institutional arrangements. Crises and their aftermaths are the most ideal conditions for new projects to

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successfully emerge. As established forms suffer from systematic breakdowns, there occurs a "subsequent proliferation of social, political, discursive, and representational struggles to create a transformed [new] order" (UC 101). As cracks and vulnerabilities emerge within a specific institutional ensemble, new agendas and regimes surge forth offering solutions.

In *Discipline and Punish* Foucault also emphasizes how emergent regimes frequently begin as opportunistic, functionalist solutions to problems that have become widespread in a particular 'historical conjuncture', a confluence of events involving the tensions, limits, and contradictions of an extant regime combining with the appearance of a new set of social processes and their attendant regulatory problems. For example, the transition from traditional, classical, or monarchical forms of power to a new disciplinary economy of power was made possible and even necessary by the endemic shortcomings of the previous regime and the emergence of conjunctures of new intersecting problems that the old regime could not solve.

The emergence of the disciplines "corresponds to a well known historical conjuncture" during the eighteenth century in which a "large demographic thrust" resulted in significant increases in floating populations as well as populations traditionally under supervision and management (DP 218-221). School populations spiked, hospital populations increased, and peace-time army enrollments reached unprecedented levels. Simultaneously the industrial revolution ignited huge growth in apparatuses of production. New forms of capitalism required "the adjustment of the phenomena of population to economic processes" as well as "the controlled insertion of bodies into the machinery of production" (HS 141). While each of these processes needed to be managed, so too did their correlations and consequences: industrial demands and population growth spurred numerous emergencies and conflicts (especially in urban areas, and especially around health issues—habitable spaces, epidemics, disease, hygiene) that put incredible pressure on increasingly insufficient forms of traditional power.

Populations need to be contained, supervised, and synchronized; individuals needed to be monitored and trained; and techniques of power needed consistent contact with bodies through ever-finer channels (PK TP 151-152). "Neither the residual forms of feudal power nor the structures of the

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administrative monarchy, nor the local mechanisms of supervision, nor the unstable, tangled mass they all formed together could carry out this role: they were hindered from doing so by the irregular and inadequate extension of their network, by their often conflicting functioning, but above all by the 'costly' nature of the power that was exercised in them" (DP 218-219). They were too costly in many senses: their cost to the Treasury, their dependence on corrupt and onerous tax collection, their costly ostentation (expenditures of the monarchy, its reliance on spectacles of its power), an intensification of forces of resistance, and subsequent spending in a "cycle of perpetual reinforcement" (DP 218-219; PK 119). New economies of power became necessary. "Traditional, ritual, costly, violent forms of power" were thus replaced by more subtle, calculated, efficient, effective, and pervasive economies of power "at every level of the social body and utilized by very diverse institutions" (HS 141). The declining effectiveness of an established regime, crisis conditions caused by internal limits and contradictions, and the emergence of a new set of managerial imperatives created the need, opportunity, and incentive for new forms of power (HS 141).

Foucault's account of the emergence of the disciplines also echoes Peck-Brenner-Theodore on the localized expression of these systematic crises; as well as the localized responses to these problems being the initial incarnations of what would later be consolidated as a more geographically extensive, systematic regime of power. For Peck-Brenner-Theodore, emergent projects are not only responses to these wider systematic crises, but the opportunities (even stemming from these crises) for new regimes to emerge are always contextually specific, arising within particular circumstances. New regimes emerge within localized conditions and must respond to specific institutional and ideological configurations. Emergent ensembles of power must craft "historically and geographically specific forms of institutional transformation and ideological rearticulation" (UC 102-103). Emergent projects are *reactive* in two senses. First, their moments of opportunity are often defined by the problems and instabilities of a prevailing regime, so they often emerge as reactive solutions to endemic or significant problems. Second, they are reactive in the sense that their own substance is "shaped as much by their antipathies and antitheses ... as by their stated, intrinsic goals" (NU 57). Foucault's echo of these points is split among his

works. While during moments in which he lays out his general framework for studies of power he emphasizes the importance of geographical dispersion and variation in the early conditions of emergent regimes, his actual historical studies focus more on the differentiation of ascendant projects due to the institutional variation of their conditions of emergence.

For Foucault the invention of new techniques and procedures of power does not take place at a privileged central point from which they disperse, seep down, and permeate the "most molecular elements of society" (PK TL 99). The actual process of emergence is more mundane and less conspiratorial, more localized and less systematic, and more humble and less hypocritical than traditional narratives of the emergence of new forms of power suggest. This is not the case of a fully realized program unfolding in a consistent and complete realization. The emergence of inventions of new tactics and techniques of power "is rather a multiplicity of often minor processes, of different origin and scattered location" that serve as responses to localized problems, dysfunctions, objectives, and opportunities (DP 138-139). Instead of a deductive dispersal and a correspondingly deductive study of power, Foucault calls for an "ascending analysis" that must start "from ... infinitesimal mechanisms, which each have their own history, their own trajectory, their own techniques and tactics" (PK 99). Such origins at the "most basic levels" provide the conditions of possibility for the eventual interconnections and generalizations that turn these varied emergences into spatially extensive and formally codified formulas of rule (PK 99).

Foucault's actual historical analyses emphasize the institutionally specific problems that led to the emergence and early strengthening of disciplinary controls. While the geographical dimensions of these institutions are often left unspecified, each of the different institutions analyzed by Foucault include a specific set of problems they must respond to during the emergence of new techniques of power.

In the military, increased populations of soldiers increased the difficulty of management by intensifying old problems and creating new ones. Deserters had to be noticed and tracked down; increased officer reports needed to be written, checked, and corrected; detailed information had to be gathered and reviewed on individual soldiers; looting and violence had to be stemmed, especially with armies on the move; the "vagabond mass" had to be "held in place" through new techniques of enclosure; costs needed

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to be strictly controlled; conflicts with local inhabitants and authorities needed to be avoided; and accurate records needed to be kept of the disappeared and the dead (DP 189 ; DP 141-142).

In emerging hospital spaces, new populations, problems, and possibilities propelled the development and adoption of new techniques. With larger patient populations it became more necessary and difficult to recognize and track patients, expel shammers (especially in military hospitals), and limit contagion. New methods of monitoring were themselves driven and in turn drove desires to examine the evaluation of diseases, the effectiveness of various treatments, the differentiations between similar cases, and the emergence and spread of epidemics (DP 189; DP 201).

In new school spaces, larger populations and new techniques both forced and made possible more consistent and precise comparative evaluations of individual aptitudes and performances, spatial differentiations of students based on age and aptitude, elimination of chatter and noise, and tighter monitoring during exercises and test-taking to catch copiers and cheats (DP 189; DP 201; DP 147).

And in factories, the large masses of men, the increasingly complex machinery of production, and the emergence of new managerial techniques needed to focus on the articulation of ever more efficient relations between men and machines, the elimination of theft of materials and tools, the disruption of any developing coalitions or cabals among workers, and the reductions of inefficient and often dangerous distractions and disorders on the manufacturing floor (DP 201; DP 141-142).

In one key moment of his text, the geographical and institutional come together in Foucault's account. In discussing the emergence of disciplinary techniques of power, Foucault notes how the naval hospital in Rochefort served as an early "experiment and model" for the spatial partitionings and management techniques other hospitals would soon adopt (DP 144). Rochefort played this role because of its location at a military port and its unique administrative duties as a naval hospital, which multiplied and intensified its (military, fiscal, and health) supervisory requirements. It needed to manage a multitude of problems related to the organization of the swarming masses of men, wide variety of diseases, and a need to articulate a relation between military discipline and health. Crafting responses to these new problems made Rochefort an early innovator in new techniques of discipline within hospitals.

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Supplements for Foucault

While the above points and examples are indications of interesting overlaps and consistencies between the frameworks of Foucault and Peck-Brenner-Theodore, studies of variegation can also make a number of critical additions to a Foucauldian framework for analyzing how new paradigms of power emerge. Within their work on what I have called the "antagonistic embedded emergence" of new regimes, Peck-Brenner-Theodore can be read as offering three important supplements to Foucault.

The first supplement for a Foucauldian framework would be a stronger recognition that systems of power both in their systematic and localized forms are always in the process of transformation. While Peck-Brenner-Theodore echo Foucault's analysis of crisis conditions as critical for the emergence of a new ensemble of techniques better able to address or take advantage of these conditions of operational confusion and dysfunction, they also call critical attention to how extant systems *always* exhibit weak points and vulnerabilities and how the openness of many systems to integrating new procedures also creates opportunities for emergent projects. In their analysis of transitions from Fordist Keynesian capitalism to neoliberalism, Peck-Brenner-Theodore identify a series of features of extant or existing institutional landscapes that make them susceptible and conducive to being targeted and undermined by new projects. Even prior to destabilizing crisis conditions, extant political settlements and regulatory landscapes are susceptible to being targeted for critiques and challenged by combative forces as all such orders present a variety of "conjunctural openings, political vulnerabilities, ... and strategic opportunities" that can be cast by emerging competitor paradigms as possibilities for new modes of intervention and regulation (VN 210-211).

The second supplement from a principle of antagonistic embedded emergence would be to expand the analysis of emergent regimes beyond merely their reactive formation in response to the problems plaguing a regime of power or particular institution. New ensembles of techniques and procedures of power are often associated with a particular set of actors or competing political project. Just as specific actors, alliances, and specific forms of knowledge fueled the emergence of Neoliberalism, a

Foucauldian perspective should focus on how emergent regimes of power are, in addition to *reactive*, also *strategic* and *projective*. They are *strategic* in the sense that their supporters scan institutional landscapes for weak points to pursue as openings for change "[S]uch projects involved strategically selective appropriations of ... doctrine, and strategically customized, intensely combative applications of the latter to contextually specific formations of regulatory failure, institutional maneuverability and sociopolitical contestation" (VN 213). Emergent projects can also be projective in the sense that they can project a whole new set of functions, relations, rules, and values as part of regulatory rearrangements intended to reshape and reposition an institutional scaffoldings for future transformations.

The third possible supplement for Foucault from Peck-Brenner-Theodore on antagonistic embedded emergence is how conflictual and cumulative the interactions are between competing regimes. Foucault's account of the emergence of the disciplines depicts this transition as merely a breakdown followed by a new set of techniques emerging that better manage these problems and maximize the effects of power. Unfortunately Foucault fails to examine how the institutional actors invested in the old regime or the sheer inertia of a regime of power inhibited the emergence of the disciplines. The difficulties the disciplines overcome in Foucault is all depicted as problems with their targets of applications (students, soldiers, prisoners) but nothing is said of the conflictual interaction between regimes, the extended iterations of this conflict, and its long-term cumulative impacts.

For Peck-Brenner-Theodore, the volatile and contested collision between emergent projects of power and the extant and entrenched (though often troubled) institutional landscapes is a tangled and fateful "conflictual interaction" (NU 53). Previously prevailing systems of power—even in crisis conditions—will often, due to entrenched interests, social inertia, and significant ideological antipathies, combatively resist the implementation, spread, and consolidation of new regulatory inventions. Emergent projects must respond with destructive dismantling of prevailing forms. Yet the complex transition from an 'extant' or 'existing' regime to an 'inherited' one leaves 'legacies.' When localized forms of experimental regulation "collide with inherited regulatory landscapes, contextually specific pathways of institutional reorganization crystallize that reflect the legacies of earlier modes of regulation and forms of

contestation" (UC 102-103). The task of dismantling a previously prevailing regime is not a one-off event

or short phase; such dismantling is an "always incomplete task" that leaves an "enduring set of

institutional legacies and co-evolving conditions" (NU 56). Transitions entail successive rounds of

reforms as inherited structures are reworked and new forms of institutional regulations are implemented

and solidified. The cumulative rounds of contested restructuring are iteratively layered into the features

and functioning of the localized formation of the newly dominant regime (VN 190). The legacies that

formerly dominant regimes leave are not mere memories, or even "anachronistic institutional residues";

rather, the lingering presence and continuing effectivity of elements and patterns associated with the

previous regime form interpenetrated layers with a newly restructured regulatory landscapes and thereby

actively contribute to the shaping of "pathways and outcomes in distinctive, generative, and contradictory

ways" (NU 54).

Considering the work of Peck-Brenner-Theodore as a theory of power, then, and here focusing on

their conceptualization of emergent regimes, can supplement the work of Foucault while also contributing

to a rereading of Foucault that focuses on arguments not normally treated or appreciated with appropriate

depth. In the spirit of Foucault's four rules for the study of power in his *History of Sexuality Volume I*, we

may thus summarize a principle for studies of variegated power and the antagonistic embedded

emergence of new regimes as follows:

Rule 1: Antagonistic Embedded Emergence

The study of new regimes should focus on how in initially geographically dispersed locations,

new projects of power emerge by crafting new techniques of control or reworking old ones in order to

respond to the weak points, vulnerabilities, crisis conditions, or fundamental openness of all systems of

power. Situations in which large historical conjunctures—such as the introductions of new technologies—

are especially fertile conditions for transformations in regimes. Particular institutions will display specific

regulatory problems to which the emergent regime provides superior solutions. These emergent projects

will be reactive in the sense that they react to the openings presented by the problem and vulnerabilities of the old regime; they will be strategic in the sense that they will be tailored and customized to these geographically or institutionally specific regulatory problems; and they will be projective in the sense that their techniques will be part of a wider emerging ensemble or a wider emerging project of power that requires present scaffolding for future developments. The relations between the declining and emergent regimes are often combative affairs. This collision shapes and also localizes the strategies and substance of emergent regimes—a constitutive conflictual interaction. And this collision can continue for extended periods of time, as the emergence of a new set of interconnected techniques and wider project of power can often take extended periods, during which the declining regime may maintain overall dominance during a period of conflict and transition. The consequences of these combative relations and any retentions of older regimes in new ones are iteratively layered into the new institutional landscapes.

Uneven, Multi-Path Diffusion

Work done with a Foucauldian lineage rarely pays attention to the process and paths by which new forms of power are disseminated throughout a society. Foucault recognized that such diffusion was often a complex process, with many different actors and institutions in a wide range of locations and for a broad range of reasons contributing to the spread of a particular ensemble of techniques; yet he focused relatively little attention on how this process unfolds and why the differences in the manner of its spread fundamentally alter the particular operations as well as the eventual hegemonic consolidation of the new regime. Peck-Brenner-Theodore's work on the variegation of political economic systems emphasizes such aspects. Reading Foucault with and against Peck-Brenner-Theodore on policy diffusion can illuminate and supplement Foucault's own account.

By contrasting their account of policy diffusion with conventional accounts that privilege rational actors, always successful models, perfect replication, unidirectional vectors, and flat frictionless planes of policy mobility, Peck-Brenner-Theodore articulate a principle of what I call "uneven and multi-path diffusion." According to this principle, the dissemination of policies involves: policy packages that are

evolving composites of 'bits and pieces', policy networks of heterogeneous actors with mutating relations, complex paths of diffusion with shifting spatial morphologies, and a set of impacts that are always contextualized and polymorphic. The ways in which policies are constituted, travel, and are implemented have profound and differential effects on the ultimate shape and effects of those policies. Peck-Brenner-Theodore use this principle to analyze how policy packages within Neoliberalism spread and evolve from place to place and thus both consolidate Neoliberalism as a hegemonic regime and differentiate its local instantiations. This attentiveness to the evolving and differentiated character of policy mobilities is a distinctive feature of the work of Peck-Brenner-Theodore and provides a number of key comments on and amendments to the work of Foucault.

Returning to the work of Foucault with this principle in mind, several moments in his analysis gain new prominence. By connecting the conceptually rich descriptions of these dynamics by Peck-Brenner-Theodore with some parallel aspects of the analysis of power and disciplines conducted by Foucault, we can see how a notion of uneven, multi-path diffusion both echoes and extends Foucault's account and makes possible an improved Foucauldian articulation of the processes and importance of transitions between regimes of power. Integrating these insights makes possible the articulation of a principle of uneven, multi-path diffusion within a framework of 'variegated power'.

Echoes in Foucault: Uneven, Multi-Path Diffusion

Returning to and rereading Foucault through the lens of a principle of "uneven multi-path diffusion" emphasizes some dimensions of his descriptions of systems of power that receive relatively little attention in the secondary literature on Foucault. Foucault's own depictions of the spatial spread of certain techniques of power parallel some of the points made by Peck-Brenner-Theodore in their own analyses focused on the spread of Neoliberalism. For Foucault as well as Peck-Brenner-Theodore, the diffusion of new techniques of power depends on the generalizability of the techniques themselves (their capacity to be implemented in diverse situations), depends upon formalized systems of knowledge for

their crafting and dissemination, and exhibits multiple temporal, spatial, and institutional pathways to widespread application.

According to Peck-Brenner-Theodore, select types of policy packages spread because they are considered "prototypical," "accessible," "all-purpose," and "tested and successful" (AN 335, 338). Such stylized templates serve "formatting functions" as well: they not only stitch together a preferred set of practices and conventions but also help local policymakers define their fields of action in terms of a strategically biased and systematically congruent set of problems and solutions (MMM 171). I see echoes of this point from Peck-Brenner-Theodore in Foucault's own emphasis on the need for techniques to be generalizable (DP 207). According to Foucault, for specific techniques to be able to "spread throughout the whole social body," such techniques must be capable of moving "from one project to the other," from a set of exceptional mechanisms used in a particular situation for a particular project to a generalized function capable of being mobilized in various projects and institutions (DP 209). The "formula for this generalization" is the design of an "elementary and easily transferable mechanism" that can be "detached" from its conditions of emergence, loosen its operational identification with specific institutions or spaces or populations, and become capable of integration into the "basic functioning of society," capable of "rooting in the most important, the most central and most productive sectors of society" (DP 211). The techniques that become dominant are those that resolve historically specific institutional dysfunctions, agendas, or opportunities. Foucault's 'generalizable' can be read as Peck-Brenner-Theodore's 'prototypical' and 'accessible': the techniques that spread are those that are useful for pervasive problems and are adaptable to new situations. The disciplines diffused throughout society in part because they were developed and disseminated as effective responses to a host of problems plaguing a large number of institutions. The techniques prove attractive to new locations or institutions since they have proven effective in their previous applications elsewhere.

Peck-Brenner-Theodore also note the important role in policy diffusion of what they describe as "norm-shaping," the "framing of policy rationalities," and the enforcement of a "normative consensus" (DCA 28). Coordinated networks of actors and institutions develop, evolve, and enforce a normative

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consensus by legitimizing certain kinds of expertise (forms of knowledge as well as specific actors), selecting and crafting stylized schemes which they promote as 'favored models' and 'best practices', and strategically re-circulating these regulatory models and socio-technical fixes through local projects and formations. Where I see the parallel in Foucault is in his analysis of the correlations of systems of power and forms of knowledge. Famously Foucault argues that "power produces knowledge," that they both directly imply and reinforce one another, and neither could exist without the other: "there is no power relations without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations" (DP 28). A point related to the process of diffusion but rarely drawn out from Foucault's discussion of power-knowledge is how the intertwining of relations of power and systems of knowledge also plays a key role in Foucault's conceptualization of the dissemination of particular procedures or whole technical ensembles of power. The development of new forms of knowledge helps develop and spread new systems of power. For example, while many of the techniques associated with the disciplines had long histories of use within particular locations or institutions, these techniques only combined and generalized during the eighteenth century when newly emergent forms of knowledge identified them as useful instruments for applying new ideas. At the same time, these techniques served as illustrations and producers of these ideas. "It was a double process, then: an epistemological 'thaw' through a refinement of power relations; a multiplication of the effects of power through the formation and accumulation of new forms of knowledge" (DP 224). The spread of the disciplines would not have been possible without the simultaneous development of clinical medicine, psychiatry, child psychology, penitentiary science, new pedagogical philosophies, and industrial sciences (DP 224). These sciences and the techniques they helped construct or justify did not only reorganize institutions such as hospitals, schools, factories, and prisons, but in addition, these institutions utilized such instruments of subjection to contribute to the further development and application of these sciences.

Another interesting parallel between Peck-Brenner-Theodore and Foucault is the how the diffused application of these policies and techniques displays both general and specific features. For Peck-Brenner-Theodore, the diffusion of specific organizational models involves a process of

multidimensional mutation in which these models are revamped and customized through localized experimentations, opportunities, successes, failures, conflicts, and crises (VN 196). While still bearing some features of a transcontextual prototype, policy models, as key contributors and indicators of systems of variegated power, remain fundamentally plastic and polymorphic—they change as they move and they take on specific features in specific contexts (VN 196; DCA 23).

This mix of consistency and mutation is paralleled within Foucault's descriptions of how specific techniques were developed for specific reasons but spread due to their serving different needs and applications in other institutions. The techniques that Foucault describes as spreading may have been generalizable, but an important part of this generalizability was an applicability to diverse situations. "On almost every occasion, they were adopted in response to particular needs .... This did not prevent them being totally inscribed in general and essential transformations" (DP 138-139). The techniques of disciplinary power were "present at every level of the social body and utilized by very diverse institutions (the family and the army, schools and the police, individual medicine and the administration of collective bodies)" (HS 141). For example, Foucault describes how time-tables spread from monasteries, to armies, to schools, to workshops, and hospitals (DP 149-151). The time-table for example allowed "technicians of time" to emerge in each of these institutions; who were able to better regulate the cycles of activity, to establish a "rhythmics of time" that made possible not only a more detailed scheduling, supervision, and regulation of the activities of individuals, but the organization of larger populations which were swelling these institutions in the early eighteenth century. While serving this general purpose, this technique was being applied to different populations and used with different purposes within these diverse institutional spaces. The time-table proved useful in training and supervising workers, testing and judging students, organizing schedules in hospitals, coordinating troop movements in militaries.

Along these same lines, Foucault insists that the disciplines not be identified as a particular apparatus or institution, but as a modality of power (DP 215-216). Partly this was because disciplinary techniques "comprised a whole set of instruments, techniques, procedures, levels of application, [and] targets," which accounted for their transcontextual consistency. But this emphasis on the disciplines as a

modality of power was also because they spread among, and proved useful and adaptable to, a broad

range of institutions that molded them for their own purposes: the disciplines were adopted and adapted

by "specialized institutions" such as penitentiaries, "institutions that use it as an essential instrument for a

particular end (schools, hospitals)", as well as by "pre-existing authorities" that used them as a "means of

reinforcing or reorganizing their internal mechanisms of power," also by "apparatuses that have made

discipline their principle of internal functioning (the disciplinarization of the administrative apparatus

from the Napoleonic period)", and by particular "state apparatuses whose major, if not exclusive, function

is to assure that discipline reigns over society as a whole (the police)" (DP 215-216).

For Peck-Brenner-Theodore, policy diffusion is a multi-centric, multi-vector, spatially

heterogeneous, and temporally discontinuous process. They criticize accounts that depict capitalist

economic policies, and Neoliberal policies in particular, as emanating from some all-powerful center

(whether London or Washington DC or New York City) towards a passive periphery, or depictions of

policies spreading out on some flattened, featureless, and inert plane (like those in rational-actor and

market-based models) (DCA 27; MMM 169-170). Peck-Brenner-Theodore also highlight the non-linear

temporalities and uneven spatialities of these policy diffusions. They argue that policy diffusion is an

inherently multi-centric process, with innovations emerging and spreading out from relationally

interconnected yet diverse situations. Ensembles of innovations move in multiple directions in a

"continuous, multisite process" (DCA 27). Policies spread sporadically, emerging from diverse origins,

transferring at different tempos, moving from site to site along different paths with different levels of

lubrication and friction (DCA 27; AN 335).

A famous phrase from Foucault echoes this description: The invention and spread of new forms

of power does not spring up suddenly fully formed or from a concentrated center of power, but "is rather

a multiplicity of often minor processes, of different origin and scattered location, which overlap, repeat,

or imitate one another, support one another, distinguish themselves from one another" (DP 138-139).

Foucault too notes how new ensembles of power diffuse through a society at different times, along

different paths, and at different speeds. Foucault describes how disciplinary techniques were adopted by

different institutions at different times: "...at work in secondary education at a very early date, later in primary schools; they slowly invested the space of the hospital; and, in a few decades, they restructured the military organization" (DP 138-139). Different techniques passed through different institutions along different pathways: some traveled from hospitals, to schools, to workshops; others moved from schools, to hospitals to the military (DP 224; DP 138-139). And some techniques traveled between different institutions at different speeds: "They sometimes circulated very rapidly form one point to another (between the army and the technical schools or secondary schools), sometimes slowly and discreetly (the insidious militarization of the large workshops)" (DP 138-139). Foucault calls this the "swarming of the disciplinary mechanisms" (DP 211). While the disciplinary mechanisms spread from institution to institution, there was a simultaneous tendency for them to become "de-institutionalized" and "emerge from the closed fortresses in which they once functioned and to circulate in a 'free' state; the massive, compact disciplines are broken down into flexible methods of control, which may be transferred and adapted" (DP 211). For Foucault, as for Peck-Brenner-Theodore, these scattered origins and multi-directional flows of new techniques are what make possible the ultimate consolidation of a hierarchical "meta-power" (in Foucault) or "meta-regimes" (in Peck-Brenner-Theodore) (PK 122; VN 211).

Supplements for Foucault

While a perspective of 'variegated power' crafted from the work of Peck-Brenner-Theodore emphasizes the importance of processes of diffusion and this emphasis highlights aspects of Foucault's thought that have been underappreciated, the work of Peck-Brenner-Theodore on variegated diffusions of new policy ensembles also supplements and extends Foucault's work in multiple ways. Rereading Foucault through the work of Peck-Brenner-Theodore can also make clear that the process by which specific elements of a regime of power are spread is much more varied, complicated, and consequential than how it is presented in Foucault. I think the two following supplements derived from the studies of what I call 'uneven, multi-path diffusion' in Peck-Brenner-Theodore, would be beneficial additions to Foucauldian framework.

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The first supplement for a Foucauldian framework would be an inclusion of an analysis of the actors that play key roles in disseminating regulatory innovations. Foucault says very little about the actual agents of diffusion. In contrast, Peck-Brenner-Theodore argue that the policy actors and networks that facilitate this spread are key variables to understanding the process of policy diffusion. Policy actors and networks operate in complex and dynamic fields of power. Rather than the flat, frictionless spaces through which policies can spread simply in response to rational assessment of success and market signals (as depicted in conventional economic accounts of policy diffusion), the landscapes that policies must travel through, and policy actors operate within, are "shifting organizational and political fields" which are "heavily mediated" and made up of "adaptive connections, deeply structured by enduring power relations and shifting ideological alignments" (MMM 169-170). The actors who operate in these spaces are also complex, mediated agents, not the rational actors of capitalist ideology, but "sociologically complex actors" who are constitutively shaped by the fields they operate within and the policies they craft and disseminate (MMM 170).

The *networks* of policy actors are also particularly important. Emergent policy paradigms depend upon the enrolment of advocates and followers for their ascent to hegemony. Heterogeneous networks of innovators, circulators, emulators, and adaptors must be cultivated; extant policy networks must be 'colonized'; new circuits must be created (MMM 170; AN 338). The emergence of a tightly-linked network of an "influential cadre of experts" is decisive for the reach and influence of new regulatory regimes (AN 338; DCA 23). This cadre can be located in diverse institutions in scattered locations, though such networks will often take "root within newly emergent centres of persuasion," among "communities of practice," and in "zones of experimentation" (VN 214). The success of these networks and the policies they support is not a foregone conclusion. These networks can help accelerate the dissemination of new regulatory models by promoting, justifying, and legitimizing these policies. But when these policy networks are able to spread an interrelated set of policy models, they simultaneously contribute to the tendential consolidation of a distinct set of norms and paradigms as part of a "network

consensus" and the "sedimented layering" of their own status as experts, the kinds of knowledge they rely upon, and the models they promote (DCA 22; AN 338; MMM 169; MMM 172).

The second supplement from a principle of uneven, multi-path diffusion would be cumulative process of differentiation. While Foucault notes how the techniques of power are implemented in unique ways in different institutions, his account does not trace the cumulative layering of these regulatory reforms and how this leads to an accumulation of deviations over time. This contextualizing effect is both a product and contributor to a cumulative "layering process" of successive rounds of always ongoing regulatory restructuring (VN 190; VN 182). Policy adoption always takes place in conditions contoured and structured by previous rounds of policy projects as well as endemically dominant politico-institutional settlements. Policy transfers tighten the recursive relations between geographically dispersed regulatory projects, but the inherently localized nature of this diffusion also produces context specific, qualitative transformations of institutional landscapes (VN 190). The successful ascendance of policy packages to hegemonic positions in particular locations depends on a "series of trial-and-error maneuvers, manipulations, negotiations, and struggles" as local situations are reshaped by the implementation of these spreading policy templates (AN 338). Significant contestations, dysfunctions, divergences, and failures are frequent. While Foucault notes the importance of resistance to shaping power (as will be discussed in the next section), he fails to tie this insight into his thoughts on the diffusion of particular techniques or ensembles of techniques. Peck-Brenner-Theodore emphasize much more strongly and consistently that this process of diffusion has unpredictable and unintended consequences, as policies spur local transformation that diverge from dominant pattern through "unscripted deviations and alternative mutations" as well as site specific conflicts, failures, and contradictions (DCA 29). The cumulative layering of policy packages is a force both of geo-institutional consolidation (through the spread of similar techniques, the connections between locations and projects, and the emergence of macrospatial meta-powers) but they are also the spur towards immediate and long-term differentiation between these institutional projects.

The lens and substance of Peck-Brenner-Theodore's account of variegation, and here in particular the principle that I have identified as "uneven, multi-path diffusion," allows us to focus in on Foucault's own work describing the diffusion of new techniques of power. While Foucault's account includes important analyses of the role of generalizable techniques, power-knowledge relations, and a recognition of the multiple pathways of diffusion, a variegated account adds greater depth to the understanding of the role and nature of policy experts and networks, the heterogeneous compositions of ensembles of regulatory policies, the variegated impacts of policy diffusion, and the interlinkages between places that result. In the spirit of Foucault's four rules for the study of power in his *History of Sexuality Volume I*, we may summarize a principle of studies of variegated power, a principle of the "uneven, multi-path diffusion" of regulatory packages, as:

Rule 2: Uneven, Multi-Path Diffusion

The diffusion of ensembles of policies, instruments, and techniques requires recursive relations between forms of knowledge and practices of power. New methods spread to new situations and are implemented as tools of control. Techniques must be generalizable or adaptable to new situations. A technique or policy will often spread in multiple versions in part due to its multiple means of diffusion and in part due to its varied conditions of application. Regulatory ensembles have scattered origins, and are relational compositions made of bits and pieces from many locations. As they move from place to place, or institution to institution, they mutate; they adapt to the new context; and collectively they become polymorphic. The techniques or ensembles of techniques travel along complex spatial, temporal, and institutional pathways. There are multiple vectors of spatial diffusion, including vertical, horizontal, and transversal movements. Diffusion is also inherently uneven—moving to and between some locations and not others, bypassing some locations, and producing an uneven patchwork. Diffusion is also nonlinear: new forms of power move from location to location, institution to institution, at varying speeds. Transitions between institutions of the same type are often faster than cross-type diffusion; geographical proximity also facilitates quicker diffusion. Policy networks and key institutions play a

pivotal role in the spread new regulations. Mediated, situated actors form networks that enroll advocates and coordinate the spread and implementation. These networks will often craft new policies into stylized templates that are ostensibly more attractive to prospective adopters. These networks seek to entrench and enhance their own status and role as well as the forms of knowledge that justify their position. Implementations, however, are not always successful; policy diffusion and adoption is plagued by failure. Though, these failures often inform new waves of regulatory development, diffusion and implementation. Successful waves of reform produce both consolidation and differentiation; the spreading of policies interconnects locations and produces common frameworks; but the varied composition of these strategies and the localized nature of their operation (their reshaping of specific contexts, and contexts' reshaping of them), means diffusion differentiates as much as it homogenizes.

Path-Dependent Reinvention

Foucault's analysis of power is frequently associated with images of the ubiquity and productivity of power and of disciplinary power extending throughout society, reaching deep down into the elementary details of bodies, time, and space to construct and control docile bodies. Descriptions of the extension, efficiency, precision, and command of power are frequent. While Foucault is frequently cited for his views on resistance (the 'odd term' of power relations, as ubiquitous as power), some of the consequences of this notion of resistance as well as the myriad other ways in which power is challenged are most often overlooked. This is pivotal for many reasons, but perhaps the most important is that power's response to phenomenon such as resistance, agitations, and crises account for much of its own character as limited yet evolving.

In their work on the emergence, limitations, and evolutionary pathways of capitalism and neoliberalism, Peck-Brenner-Theodore distinguish their accounts of regulatory regimes from those that would depict formations of power as settled, fully formed, or defined by a particular set of inflexible and unchanging principles. They reject depictions of systems of power as fixed, homogenous, operating with a mechanical rigor, as closed systems of a strict functionalism. They also distinguish their work from

views of contestations, contradictions, crises, and resistance that see these events and practices as constituting existential threats to a system of power, or to be analyzed merely for the effects of undermining its operations. These events and processes often *spur power to evolve and improve* the efficiency and effectiveness of its operations. I see operating in the work of Peck-Brenner-Theodore a principle for the study of power that I call "path dependent reinvention."

One of most impressive and important dimensions of their project to study capitalism and neoliberalism as variegated, is how well it describes the dynamism of power, its capacity to evolve in response to contestations, contradictions, and crises, and its consistent efforts to experiment, innovate, and improve its operations on its own. Systems of power in variegation engage in an evolutionary learning process. Problems spur innovations in systems of power; and systems power experiment and explore opportunities for innovation. In addition, Peck-Brenner-Theodore emphasize how this dynamical, evolutionary nature of power is path dependent. That is, the innovations and developmental pathways of power are fundamentally circumscribed by its past, as the opportunities and substance of new regulatory possibilities are in part determined by the regulatory arrangements that precede them. And these limitations are both specific to particular institutions (e.g. problems and paths of invention in prisons differ from those in schools) as well as particular geographical locations (e.g. the institutional legacies and interconnections differ between New York and Chicago).

Reading Foucault through the lens of this principle of path-dependent reinvention can help enrich our understanding and appreciation of moments in his texts when he discusses how regimes of power both emerge in response to, are constantly troubled by, and explicitly evolve in relation to the constant contestations, disruptions, confusion, revolts, and rebellions that occur among the individuals and populations they are attempting to control. Foucault's work echoes that of Peck-Brenner-Theodore in ways that open up new insights into and appreciations of his work. A lens of variegation helps us to read Foucault in a new way. In addition to the much cited conceptualization of resistance being as ubiquitous as power and in fact fundamental to its operations, Foucault also describes various events (such as the plague), a wide array of disturbances and agitations, shifts in the objectives of projects of power, and the

experimental ethos of modern regimes all as evidence that systems of power are forced to, and choose to, evolve. Yet a framework indebted to Foucault could also benefit by including a couple conceptual supplements from the principle of path dependent reinvention in the work of Peck-Brenner-Theodore. Collectively these insights serve as a suggestive and diverse framework to think through the relations of dysfunction, agitation, resistance, and evolution within systems of variegated power.

Echoes in Foucault: Path-Dependent Reinvention

For Peck-Brenner-Theodore, capitalism is not all-powerful; neoliberalism is not an all pervasive, completely successful political project that has reshaped every institution in its perfect image. For them (as well as for Foucault), all institutional projects invariably include contentious politics that shape and limit the operations of institutional building and maintenance performed by dominant regimes. Resistance is not simply reactive, or a periodic nuisance. Contentious relations between actors shape the substance, focus, and evolution of particular policies as well as projects as a whole. "Resistance, therefore, cannot be simplistically located 'after' ... as an *ex post facto* response to an otherwise smoothly operating regulatory regime. On the contrary, a dialectics of intense, often bitter contestations have shaped each facet of, and moment in, the evolution" of regimes of power (NU 65). These contestations are capable of demanding and receiving considerable compromises and substantial changes; yet they are also capable of provoking sharp responses from power, pushing it to evolve towards even harsher policies. The consequences of contestation cut both ways; "there is nothing preordained about such struggles" (NU 65).

For Foucault, as is well known among his readers, resistance is as ubiquitous as power relations; indeed, he claims that "there are no relations of power without resistances" and such resistances are "formed right at the point where relations of power are exercised" (PK 141). Resistance is inscribed "everywhere in the power network" as power's "irreducible opposite" (HS 95). Practices of resistance are not, in the face of dominant power relations, merely frustrated or doomed to reactivity, passivity, and defeat. Resistance is always and everywhere effective, but unevenly so and in multiple ways: "the points, knots, of focuses of resistance are spread over time and space at varying densities, at times mobilizing groups or individuals in a definitive way, inflaming certain points of the body, certain moments of life,

certain types of behavior" (HS 95). This mobilization and inflammation is not restricted to merely isolated moments or spatially circumscribed events; various practices of resistance have the potential to be interconnected multiplicities of resistance, a 'swarm of points' that can traverse individuals, networks, and stratified continuums. When strategically codified into such "global strategies," these integrated practices of resistance are what make a revolution possible (PK 141; HS 95).

Yet, the effectiveness of resistance is not only in its ubiquitous local contestations or its creation of the conditions for large-scale revolutions. In an implication of Foucault's rhetoric on resistance, and in an echo of Peck-Brenner-Theodore, the ironic consequences of practices of resistance are that they are crucial to the dynamic evolution of power. The existence of relations of power actually depends upon a multiplicity of points of resistance: "these play the role of adversary, target, support, or handle in power relations" (HS 95). Since forms of resistance contest, test, exceed, and disrupt relations of power, power relations are inherently "modified by their very exercise," always unstable and heterogeneous, and constantly (sometimes gradually sometimes dramatically) transforming in response to these contestations (HS 97). Power, in part because of its need to respond to resistance, is not static. There has "never existed one type of stable subjugation, given once and for all" (HS 97). Relations of power are not fixed, but always to some degree flexible, defined not by an unchanging form but as a "pattern of modifications" and "matrices of transformation" that evolve in a "complex and unstable process" (HS 99; HS 102). Resistance can often have the unintended effect of enhancing the micro-practices and strategic integration of power relations (HS 102).

In addition to resistance, there are echoes between Peck-Brenner-Theodore and Foucault on the role of dysfunction and failure. For Peck-Brenner-Theodore, the analysis of institutions must avoid assuming or emphasizing institutional cohesion and stability and thus be inattentive to the historically and spatially variable levels of institutional dynamism, discordance, and disequilibrium. Institutions, and the larger systems they are intertwined within and help support, demand incessant construction, maintenance, and adjustment. Any final fix will prove elusive. Institutional landscapes are churning and dynamic, propelled forward by the need to "repeatedly respond to endemic failures of policy design and

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implementation" (NU 64). Institutional geographies are constantly, cumulatively, and complexly reconstituted in the wake of dysfunctional operations and failed policies.

Besides resistance, there are other classes of events and practices that Foucault describes as disturbing established forms of power, forcing them to improve or transform in response to these disorders and dangers. One category of these constitutive disturbances is special events that forced power to transform and haunted its future operations. The best example in Foucault is the plague. Responses to the plague became an early model and initiator for modern forms of power. In local responses to the plague, a "complete hierarchy that assured the capillary functioning of power" was established; for rulers, this became the source of a "political dream" of a "perfectly governed city" that was "traversed throughout with hierarchy, surveillance, observation, writing" (DP 197-198). Yet what motivated this dream was the festival that sometimes emerged around plague conditions and became celebrated in literary forms. In times of the plague, laws became suspended, prohibitions were lifted, the population dispensed with their identities and mingled in unmasked frenzies (DP 197). While the rulers may have dreamt of the state of plague in order to fashion their new enhanced techniques of power, within this dream "can be read the haunting memory of 'contagions', of the plague, of rebellions, crimes, vagabondage, desertions, people who appear and disappear, live and die in disorder" (DP 198). Certain events can provoke power and force it to adapt, and sometimes expand its operations and improve its efficiency.

According to Foucault, some problems that provoked the emergence of particular ensembles of techniques continue to linger and shape their operation. For example, the disciplines emerged in part to define and repress "a mass of behavior that the relative indifference of the great systems of punishment had allowed to escape" (DP 177). Subtle procedures of observation, examination, writing, and judgment were developed in order to "correct the slightest departures from correct behavior" (DP 178). A micro-penalty targeted a long and varied list of deviations that had proliferated among the burgeoning populations of early modern schools, prisons, workshops, hospitals, and militaries. These included deviations of time including lateness, absences, and interruptions; inappropriate activities such as

inattention, negligence, and lack of zeal; problems with speech such as insolence and chatter; difficulties with bodies including irregular gestures and uncleanliness; and sexual deviations such as impurity and indecency. While disciplinary power emerged to correct these behaviors, it was perpetually plagued by them, tested, exceeded, and provoked by them. These agitations served as power's persistent adversary and target.

Relations of power in Foucault need to both adapt to and take advantage of what they target. Evolutions of power in response to agitations and disturbances in factories and prisons are good examples. In factories, huge populations were concentrated and new techniques of control were needed and constantly sharpened in response to the threats of thefts, interruptions, disturbances, spontaneous organizations, cabals, and revolts (DP 141-142; DP 220-21). In prisons, the gathering together of masses of criminals pushed prison and penitentiary scientists into constant reform: rather than occasional and successful corrections to intervals of instability, prison reform is part of the very functioning of the prison, "bound up with its existence throughout its long history" (DP 234). The concentrations within prisons raise the ever present possibility and frequent actualization of the formation of complicities, the immorality of 'mysterious associations', and violent plots and revolts (DP 237). Far from a stable institution and a fixed set of power relations, the "prison has always formed part of an active field in which projects, improvement, experiments, theoretical statements, personal evidence and investigations have proliferated" (DP 235).

A third echo between Peck-Brenner-Theodore and Foucault on the constant but circumscribed reinventions within relations of power is the phase transition undergone by regimes that move from 'emergent' to 'dominant'. In their discussions of the spread of neoliberalism, Peck-Brenner-Theodore highlight an "evolutionary shift" in the experimentations, targets, and intentions of the political project as a whole (VN 215). They note a shift from the destabilizing early efforts towards a more positive and creative experimentation in which specific projects attempt to construct new politico-institutional infrastructures (AN 335). The early efforts were meant to destabilize, undermine, and replace the institutional landscapes of the previous regime Fordist regime; while the second phase is meant to

cumulatively create (though still through trial-and-error) more long-lasting, secure foundations for the reproduction and more efficient operation of the neoliberal regime itself. The first phase they refer to as a reactionary, dismantling 'roll-back', and the second phase as a consolidating, deepening 'roll-out' (VN 211-215).

In a rarely noted moment in his account of the disciplines, Foucault refers to a two-phase unfolding of the disciplinary project as the "functional inversion of the disciplines" (DP 210). At first, disciplinary techniques were simply designed to deal with disorganized and confused masses, dangerous individuals and populations, or spiking inefficiencies and inconveniences that plagued major institutions towards the end of the reign of traditional techniques of power (e.g. confinement and levying). But as the disciplines responded to these problems, developed techniques to address these agitations and assemblies, and diffused throughout the primary institutions of emerging modern societies, they took on a fundamentally different role: "now they were being asked to play a positive role, for they were becoming able to do so, to increase the possible utility of individuals" (DP 210). The evolution of relations of power within the military and the workshop provide two primary examples of this shift. In the military, disciplines emerged as preventative measures to reduce or stop looting, desertion, and disobedience among troops; however the disciplines evolved to become "a basic technique to enable the army to exist, not as an assembled crowd, but as a unity that derives from this very unity an increase in its forces" (DP 210). Disciplines, in their second, positive phase in the military, made possible increases in skills, coordination across individuals and units, an acceleration of movements, greater complexity of attack, and increases in offensive power. Within the workshops or factories, the disciplines also shifted: first they were focused on simply enforcing a greater respect for regulations and the prevention of theft and losses (to which early factories were particularly prone due to the huge concentrated masses); but then became a force that integrated individuals into a machinery of power that increased "aptitudes, speeds, output and therefore profits" (DP 210). The disciplines in Foucault, like neoliberalism in Peck-Brenner-Theodore, transitioned from an early reactive phase of emergence and diffusion towards a more positive project that

determined a new set of goals and consolidated its hold as the dominant regime within a particular society's most important institutions.

A final echo between Foucault and Peck-Brenner-Theodore on the inventiveness of regimes of power is the role of experimentation. While systems of power evolve due to resistance, dysfunction, and transitions in their agendas, they also evolve due to their own practices of experimentation. Peck-Brenner-Theodore stress this point repeatedly in their analysis of capitalism and neoliberalism in particular. For them, regulatory experimentation is critical in the early emergence of a regime, as the ascendance of a new institutional ensemble of power is often characterized by a place-specific probing of institutional weaknesses and other opportunities for the imposition of new modalities of governance. Transitions between regimes are never linear, rather such transitions are characterized by "contested, trial-and-error searching process, in which an ascendant repertoire of experimental strategies is being mobilized" (NU 64). This experimental, trial-and-error spirit persists even after a regime has established its dominance. Rather than "fixed blueprints," institutional regimes are characterized by "an evolving, experimental repertoire" whose "mutating policies" take many twists and turns over the course of their implementation (MMM 173). Within projects of institutional power, "perturbations and experiments *are* the process" (VN 210). All regimes have an "adaptive capacity" to experiment and adjust in the face of changing conditions, crises, contestations, and opportunities (PAM 95).

While the disciplines are often depicted, both at times by Foucault and frequently in the secondary literature, as an all-pervasive, systematically consistent, dominant regime of power, there is in his account of their operations an important emphasis on their experimental tendencies. Even after consolidation, and a shift to a more 'positive role' of enhanced productivity, the disciplines evidenced a continuing experimental disposition. The disciplines began as inventions: an "ensemble of minute technical inventions" that responded to local and particular needs by adapting old methods such as the time-table or developing new techniques to handle new problems, such as new disciplinary techniques in factories to train and coordinate a new labor force. But even as they were entrenched at their points of application and integrated into a supportive and mutually referential strategic continuum, the disciplines

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remained dynamic. In part this was due to the influence of empirical sciences: modern power became deeply intertwined with the "experimental knowledge," "a whole series of researches, theoretical or practical" that continued to investigate and 'discover' new knowledge about human bodies and minds (DP 225; DP 156). Some of the key features of disciplinary power took on this experimental ethos. The examination, for example, took the "form of the experiment" in its synthesis and cycles of observation, judgment, and correction (DP 185). The Panoptic model, the most definitive spatial organization of disciplinary power, was a "privileged place of experiments on men" (DP 204). The Panopticon model was effective as a laboratory that "could be used as a machine to carry out experiments" in various institutions: with different medicines in hospitals, different punishment on prisoners, different training methods on workers, and different pedagogies with students (DP 203-204). The disciplines were indeed dominant, yet they were also experimental, inventive, and evolving.

Supplements for Foucault

While the arguments and descriptions above make clear a number of important echoes and parallels between the frameworks of Foucault and Peck-Brenner-Theodore on the dynamics of (both forced and by choice) invention and evolution within systems of power, conceptual contributions from Peck-Brenner-Theodore's studies on variegation can also supplement the work of Foucault in significant ways. In addition to the insights about the overlaps above, their numerous insights scattered over a series of texts into what I have called the principle of 'path dependent reinvention' of regimes of power, offer two critical supplements to studies of 'variegated power' within the lineage of Foucault.

The first supplement to Foucault from a principle of path dependent reinvention is how lower level inventions and experiments in power are adopted, adapted, and diffused by higher levels. In the work of Peck-Brenner-Theodore there is much more awareness of and emphasis on how macro-spatial rule regimes have co-evolving, recursive relationships with subordinate institutions. This experimentation at subordinate levels not only serves as the multiple and diffused origins of an emergent meta-regime, but also continues to serve as the causes and catalysts for the evolution of established rule regimes: (AN 332).

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This lower level regulatory churning, then, serves as "potential incubators for mutations and alternatives" and helps produce a "mottled, striated and volatile 'moving map'" of relations within a system of power (DCA 27-28; VN 197). Rule regimes are the emergent product of these lower level transformations. Lower level innovations and mutations accumulate and iteratively reshape the regulatory parameters of a system of power. Lower level experimentations percolate upward and become a part of the parameters that govern them, as "cumulative impacts of successive waves" of regulatory restructurings infiltrate and rework the "geoinstitutional frameworks ... within which regulatory experimentation unfolds" (VN 182). Neither a top-down perspective, nor an assumption of unconnected diversity, captures the recursive co-constitution and co-evolution of hierarchically embedded formations of power. Within a Foucauldian framework, more attention must be paid to the role that experimentation and evolution play in the relations between multiple scales of power. Foucault, as noted above, make a number of interesting arguments with respect to how relations of power are dynamic and inventive, but these insights are not connected to his analysis of emergent networks, continuums, and meta-powers.

The second supplement from Peck-Brenner-Theodore on path dependent reinvention would be the notion of path dependency. Peck-Brenner-Theodore's work on the evolution of capitalist and neoliberal institutions highlights and emphasizes much more effectively than Foucault how a particular set of possibilities and developmental pathways for a particular regime of power is shaped by the specific legacies of its past. Regulatory reinventions, as results of experimentation or as responses to contestations and crisis, are profoundly path dependent. For Peck-Brenner-Theodore, the shape and substance of successive rounds of regulatory transformation are in part determined by the histories and enduring legacies of regulatory arrangements, political contestations, and crisis experiences of that particular institutional ensemble. Every existing regime "carries the residues ... of past regulatory struggles, which recursively shape political capacities and orientations, and future pathways of ... restructuring" (PAM 106). And each experimental reinvention or crisis driven adjustment in the present alters the institutional parameters for future contestations, crises, responses, and settlements. "Each round ... profoundly reshapes the institutional landscape in which subsequent ... projects unfold" (VN 197).

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This emphasis on the legacy of specific pasts also places analytical emphasis on how these processes play out in different ways in different locations. According to a principle of path dependent reinvention, the 'roiling dynamic' of resistance, dysfunction, crisis, adjustment, and experimentation is always a local affair. This roiling dynamic impacts "particular social spaces, regulatory networks, [and] local formations" in unique and uneven ways (PAM 101). Different places and different institutions do not respond to contestation, crises, and opportunities for experimentation in the same way; and these differences determine present and future differences in their morphologies and trajectories. Systems of power proceed along "manifold forms and pathways" and rather than converging on a single, homogenous formation, are the product and contributors to a complex and combined evolution (NU 64). Path dependence is profoundly spatial. This geographical dimension would be a key addition to a Foucauldian framework that mostly focuses on institutional consistencies and variations without an emphasis on how their geographical location affects their operations as well. This is the case even if the source of the problems and opportunities is in wider system dynamics, as the effects of these systematic phenomena are always mediated through localized institutional arrangements.

By juxtaposing the conceptually rich descriptions of these dynamics by Peck-Brenner-Theodore with some relatively parallel aspects of the analysis of power and disciplines conducted by Foucault, we can see how a notion of 'path-dependent reinvention' both echoes Foucault's account and offers some conceptual additions for an improved framework for the study of the evolutionary dynamics of systems of power. A perspective of 'variegated power', then, explains how regimes do not remain static, are not defined by some unchanging identity or set of rules, and are not closed systems cut off from and impervious to change; rather, variegated power illuminates how specific regimes and institutions display sometimes remarkable levels of instability, adaptation, experimentation, and reinvention, yet do so within ranges and directions in significant ways determined by regulatory legacies and geographical conditions.

Rule 3: Path Dependent Reinvention

Systems of power are fundamentally dynamic, discordant, and path-dependent. Power is not static; rather, it is a provisional pattern of transformations—correlations among evolving fields, actors, strategies, and targets. The transition from an emergent ensemble of power to a dominant ensemble often entails a shift in the focus of experimentation: from the trial-and-error targeting of an already established regime to the trial-and-error experiments towards greater operational or spatial expansion and increased efficiency. The first phase informs the problems and possibilities of the second. Resistance, agitation, and contestation are ubiquitous; if they serve to undermine and limit systems of power, they also function as critical targets, handles, and supports for the operations and evolutions of power. Provocations produce improvements. Resistance is propulsive. A contentious institutional politics can produce compromises or enhanced asymmetries and coercions. While nothing is preordained about the result, any outcome shapes the conditions and stakes of the following rounds of contestation. Some provocations are major disruptive events that power must learn from and model itself in response to; some provocations are problems for which the system emerged to handle; others are problems it produced itself; and still more migrate from elsewhere. Institutional landscapes are cumulatively made and remade from their contestations, experiments, and crises. Path dependence is a result of the different legacies, different problems, and different opportunities of different institutional landscapes. Specific and uneven policy repertories, spatial morphologies, and evolutionary trajectories are sedimented into place, producing constraints on present and future possibilities of always-evolving relations of power.

Conclusion

While the framework developed by Peck-Brenner-Theodore for analyses of variegated political economics is worthy of studies for its own merits and insights, in this chapter of the dissertation I explore some of its implications for a project of returning to the work of Foucault in order to read him differently and thereby construct a revitalized framework for studies of contemporary power. In a number of

important ways, these three principles of variegated power I derive from Peck-Brenner-Theodore highlight dimensions of the operations of power that Foucault himself articulated, yet are not part of the standard readings of Foucault. A lens of 'variegated power' helps make more clear and prominent some important aspects of Foucault's account that are not part of the established "Foucault Consensus" (Nealon 2008).

Since the work of Peck-Brenner-Theodore on variegation was mostly produced in direct response to the need to account for the emergence of a new paradigm of power (neoliberalism), its principles are helpfully (from the perspective of Foucault studies) oriented towards how new techniques of power emerge, how they spread, how they evolve, and how they consolidate into a geographically extensive, operationally interconnected, and at least provisionally hegemonic regime of power. The primary purpose for a rereading of Foucault today is to craft a framework also capable of analyzing the emergence, spread, evolution, and consolidation of a new regime of power. But rather than the neoliberal capitalism and neoliberal urbanism focused on by Peck-Brenner-Theodore, this revitalized framework from Foucault can engage in the discussions about the emergence of a new regime of power variously described as digital networks, modulations, cybernetic controls, simulations, or, as I call them, control programs. New situations should provoke new readings of established thought, new readings with new emphases and perspectives that can highlight within the work of certain scholars or particular works elements that are suddenly more instructive or valuable than they had been previously. I think these principles of variegated power help us do that with the work of Foucault.

This may seem like an odd operation to conduct with Foucault, a scholar whose evolution in his own thinking seems so grounded in the analysis of particular configurations of discourse or power. Foucault often seems like the most independent major philosopher of the late twentieth century: his work rarely quotes or engages with the work of other scholars and philosophers; he never wrote any monographs on other thinkers like the long list of such monographs and essays written by his contemporaries Gilles Deleuze and Jaques Derrida; he never situated himself within a particular school; and even his most 'theoretical' moments are mostly contained within works addressing a particular

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historical problem, and so these frameworks seem as if they have been constructed for that particular study (e.g. the sections on method in *History of Sexuality Vol. I*).

But I would make two points to support the present (and admittedly abstract) supplementing of Foucault on power. First, despite the lack of citations, direct engagements, and monographs, Foucault's work and the evolution of his thought bear clear marks of important influences from other scholars and philosophers; Foucault developed his positions not merely as he was provoked by particular historical phenomenon, but also in conversation with the concepts and frameworks that were prevalent in his day. From early Heideggerian influences, to the impacts on his early institutional investigations of the science studies of Georges Canguilhem, to the strong formative effect of structuralism (despite his claims to the contrary) on his archaeological period, to the mix of mostly submerged but still significant influences on his genealogical work (including Nietzsche, Marx, Althusser, and Deleuze and Guattari), Foucault's work evolved not merely through empirical provocations but also through conceptual exchanges with other scholars and philosophers.

Second, in Foucault's work there are several significant moments of an abstract articulation of basic principles of analyses. The introduction to this chapter already discussed the highly suggestive section of the *History of Sexuality Vol. I* and its four rules for the study of power. Beyond its four rules, this work contains a myriad of moments in which Foucault articulates some abstract principles for the study of power, and many of these moments read as a 'making-explicit' of the principles of study that guided the previous work *Discipline and Punish*. Foucault also authored the incredibly abstract and principle-laden *Archaeology of Knowledge*, a work he wrote to clarify his own framework and distinguish it from the work of structuralist scholars. All of this is to say, that the fairly abstract presentation and supplementation of Foucault's work here is perhaps not as alien to his own practice as it might seem. And certainly the evolution of a theory of power, informed by new events and new analyses, is consistent with the spirit and letter of Foucault's own evolving framework and his focus on the iterative sharpening of conceptual tools to better analyze our present conditions.

Book Review, Foucault, by Gilles Deleuze, Athlone, 1988

In this idiosyncratic, at times suggestive, and yet often perplexing reading of Foucault, Deleuze reshapes Foucault's work in light of Deleuze's own. Deleuze depicts Foucault's conceptualization of the definitions and relations of forces, power, diagrams, discourses, bodies, the outside, and resistance as consistent with Deleuze's own ontological model.

Deleuze's ontology is the result of a synthesis between post-structuralists' privileging of difference and variation and concepts from the early years of several new emerging sciences and scientific models. Deleuze was very interested in how this new set of sciences and mathematics seemed to echo some of the core changes happening in philosophy. Just as a group of French philosophers had made difference the fundamental term (replacing God, substance, essence, identity), so too were sciences such as complexity theory, chaos theory, and molecular biology placing chaos, change, and variation at the foundation of their ontologies. Deleuze was the philosopher most interested in these parallels and most aggressive about exploring their conceptual and analytical overlaps. His work with Felix Guattari— including *Capitalism and Schizophrenia Vol I and II*, *Kafka*, and *What is Philosophy?*—are littered with engagements with and appropriations from these sciences and mathematics.

Deleuze developed this ontology over the course of his many publications, and in the work reviewed here he uses this ontological model as a creative yet distortive lens to read Foucault. According to Deleuze, there is a fundamental level of generative yet chaotic relations that are selected by some agency and actualized along the two divergent lines of semiotics and matter which ultimately result in the empirical phenomenon that we experience as reality. Deleuze is at heart a strange kind of Spinozist. In Spinoza a fundamental substance, understood as either a non-transcendental god or as nature, is split into (or actualized as) the two modes of bodies and ideas which are not reducible to each other but interrelate in complex ways. If in Spinoza the substance is divided into bodies and ideas, in the work of Deleuze there is a distinction of a fundamental substance (difference or chaos) being split into semiotics and matter. At the heart of Deleuze's reading of Foucault is the tracing of a similar distinction between the

discursive and non-discursive (a distinction well-known to readers of Foucault, but here read differently than by anyone else).

Deleuze is famous for such readings; transforming philosophers from Hume, to Spinoza, to Kant, to Nietzsche, to Foucault as predecessors and exemplars of his own position. This ontological translation of Foucault is at times suggestive and reads Foucault in a direction that is both textually plausible (though very selective in which points it emphasizes in Foucault) and in direct contrast to consensus readings of Foucault as a social constructionist. Yet, however inventive this reading is, what is lost in the translation is considerable: Deleuze's ontological translation of the notion of power marginalizes the actual operations of systems of power, the role of technology in Foucault is significantly diminished, an abstract spatiality is substituted for the rich spatial analytics of power found in Foucault, and the discussion of resistance is disappointedly both personalized and very abstract.

*   *   *

Deleuze, as is the case with all the main terms through which he reads Foucault, gives an idiosyncratic twist to his reading of Foucault's concept of *power*. He contextualizes his own formulation with a long list of what power is *not* in Foucault, a series of conceptualizations of power that Foucault distinguishes his own work from. Such distinctions are as influential as Foucault's own positive conception of power. In Foucault, power is not repressive (it is productive); it has no essence; it is not an attribute; it is not homogenous; it is not localized in nor does it emanate from the state; it is never global (since it is always practiced locally and in different ways), though it is never localized (since it is always diffused throughout a society, immanent in every sphere); it is not repression nor ideology (which, as Deleuze eloquently puts it, are merely the 'dust thrown up' by the real contest and struggle between forces); power is not possessed (rather it is exercised); and power is not in the hands of the masters (since power passes through them too) (24-27, 71).

When Deleuze does discuss Foucault's own understanding of power, he goes in a dramatically different direction than the normal readings of Foucault. While most scholars writing on or using Foucault's work focus on Foucault's conceptualization of power as production, generative, inciting, and

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optimizing, Deleuze instead reads Foucault's concept of power more along the lines of one of its French

definitions rarely emphasized in readings of Foucault: power as "potential." Here Deleuze is linking

Foucault's notion of power with his own concept of difference, as a fundamental force of variation and

creation from which all things emerge.

According to Deleuze, "the power-relation is the set of possible relations between forces" (27).

Power consists of all potential interactions (37). Power is not a thing, but an exercise and a capacity (71).

Power is the mix of materials and functions (or bodies and ideas, or discursivities and the non-discursive)

before they have been actualized and organized in the ordered world of experience. Power is a "pure

unformed matter independent of the formed substances, qualified objects or beings" which it is actualized

into; and power also is a "non-formalized function, independent of the concrete forms it assumes" through

actualization (71-72). For that world of matter and functions to come to be, the relations of power must be

"realized." Forces of power remain 'virtual' and 'unstable' until "they are carried out by the formed and

stratified relations" that make up the actualized world as we experience it (74). Deleuze calls the

organizing agent of the actualizations of selected relations of non-discursive bodies and discursive

statements a *diagram*.

*   *   *

Diagram is another term that Deleuze appropriates from Foucault, but then twists and turns it in

novel ways, opening Foucault's work in unexpected directions, yet ultimately revealing Deleuze's own

framework. In the ontology of Foucault by way of Deleuze, a diagram is selection of the all the different

relations among elements that are possible. The diagram actualizes a specific set of relations of power.

Deleuze describes the diagram as an a priori "presentation of relations between forces unique to a

particular formation" (72-73). A priori here means something like prior to direct, phenomenological

experience of something. The diagram cannot itself be experienced directly. The process of actualizing

the diagrams set of relations proceeds along two 'paths.' Recalling the reference to Spinoza and the basic

model of a fundamental substance actualized into two modes, we can see how Deleuze envisions a similar

double process of actualization within Foucault. According to Deleuze, Foucault's diagrams actualize a

select set of power (or potential) relations into particular formations (the organized material world and our experience of it) through a process of differentiation along two separate but ultimately interrelated axes.

A "*system of formal differentiation*" actualizes a diagram through two forms of realization: the form of expression and the form of content. On the one hand, the form of expression produces a select set of discursivities (also referred to as statements, functions, and the articulable) which are all the "words, phrases, and propositions" that can be said within a particular formation (a particular situation, institution, or a period—diagrams exist at multiple geographical and temporal scales). On the other hand, the form of content actualizes the nondiscursive (also referred to as formed matter and the visible) which is all the "qualities, things, objects, compounds of objects" that make up a particular configuration (DF 52). So through a diagram a world of bodies and ideas, or matter and functions, or discourses and non-discursivities, becomes a reality.

Deleuze argues that the Foucault's articulation of the relation between statements and visibilities is quite complex. These two forms (of expression and content) remain heterogeneous to each other, yet are also in mutual presupposition with one another (that is, they need each other to carry out their effects), and are constantly co-adapting and interpenetrating one another. There is no direct correspondence, isomorphism, direct causality, or relation of symbolization between them. The non-discursive in Foucault—the world of matter and bodies—cannot be reduced to the determination of discourses. Yet they are intertwined with one another in complex ways. They have significant levels of autonomy in relation to each other, but they carry out their effects through their combinations.

All of this is, obviously, perhaps exceedingly abstract.

Deleuze refers most consistently to the Panoptic diagram to lend some clarity and concreteness. The Panopticon, a circular prison design conceived by English sociologist Jeremy Bentham, was a privileged reference for Foucault. According to him, the circular design that made all the inmates constantly visible while hiding the supervising guards in a central dark position, was exemplary of the Panoptic disciplinary controls that spread throughout Europe from the mid eighteenth century forward.

According to Deleuze, the Panoptic diagram is a selection and actualization of a certain set of power relations. The form of content of the Panopticon actualizes the non-discursive material of the prison: its spaces, its architecture, its play of light and geometry, and its bodies of individuals. The form of expression of the Panoptic diagram refers to the actualization of the discursivities of the prison: its discourses of penal law, its rules of operation, how speech is used in the prison (what can be said, by whom, when, and what everyone and everything is named), and its determination of certain functions for certain actors. These two sides are not reducible to each other: specific forms of penal law can operate in different architectural spaces, and difference spaces can support different functions and relations among its occupants. But they all combine in the actualization and operation of the Panopticon.

The diagram acts as an immanent cause for these particular formations: it selects a certain set of relations, serves as the model for their actualization into empirical phenomenon, and remains 'within' each formation as its 'immanent cause', but also remains "detachable" from any particular formation and repeatable in other locations and incarnations. No diagram is exhausted in any particular expression; every diagram is in principle separable from a specific result and repeatable or generalizable in another instance. So for example, Foucault argues that the Panoptic diagram was also used to guide the constructions of other institutions besides prisons. Some of the other diagrams Deleuze finds in Foucault are the Greek diagram, Roman diagram, feudal diagram, pastoral diagram, sovereign diagram, and disciplinary diagram. As Deleuze puts it, "Every society has its diagram(s)" (75).

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The final main term that Deleuze uses to organize his reading of Foucault is the *outside*. It could perhaps be considered the second side of power: if power is the set of all potential relations from which some are selected and organized into diagrams to be actualized, then the outside is power as the forces of unorganized variation and change. It both makes possible diagrams but also exceeds them. "The diagram, as the fixed form of a set of relations between forces, never exhausts [the outside], which can enter into other relations and compositions. The diagram stems from the outside but the outside does not merge with any diagram, and continues instead to 'draw' new ones" (89). Deleuze reads the *outside* in Foucault as

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something like the *chaos* of complexity theory: it is a plane of potential, of energy, and of connections from which all diagrams gather their elements and forces, but which no diagram or collection of diagrams can ever fully exhaust and to which the elements of every diagram are broken down and returned (a post-structuralist and complexity theory variant of 'from dust to dust').

While diagrams want to select and fix a specific set of relations, the outside (in Foucault, according to Deleuze) wants to multiply, change, and vary all relations. It destabilizes formations. It is a fundamental force of disorder, mutation, and evolution. The disruptive and creative force exercised by the outside against all stable formations is what Deleuze sees as 'resistance' in Foucault: "the force of the outside continues to disrupt the diagrams and turn them upside down" (94). Resistance can 'modify', 'overturn', 'change', and render 'unstable' any diagram. It is a battle between order and chaos. The forces of resistance are a "molecular [force that] bubbles away beneath the surface of the integrated" (76). For Deleuze, one of Foucault's great lessons is that "*resistance comes first*" (89). Resistance is not a reactive force, not something that happens in response to specific organizations of our material and discursive worlds; but is rather more fundamental, more active, more forceful than the diagrams and formations that organize our lives.

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While the primary objective of Deleuze's book on Foucault, as is often the case with Deleuze's work on other philosophers and artists, is an articulation of Deleuze's own thought, or at least a twisting and contortion of another's work towards Deleuze's own, there are some important points and interesting lines of interpretation presented in this strange book. First, while Deleuze's ontological model overwhelms his reading of Foucault and unfortunately transforms the stakes and importance of Foucault to a question of his abstract modeling of actualization, Deleuze does raise the issue of a materialism in Foucault that is often overlooked. Many of Foucault's conceptualizations of power (for instance, as a 'physics' and 'micro-physics'), his ubiquitous discussion of forces, his concept of multiplicity, his comments on the intransigence of 'life', and his insistence on the importance of the body's capacities, pleasures, sensations, and physiological limits point towards what I would call a minimal materialism in

Foucault. The dominant tendency is to read Foucault as a social constructionist—that since experience is filtered through language and the mind, all humans can make claims about our own constructions of the world, not as the world exists independently of us. Materialism in Foucault does not play as central a role as it does in contemporary scholarship of 'new materialism' (and fortunately so as these scholars sometimes reduce the stakes and focus of every conversation to one about materialism). But the forces and dynamics of physical bodies and objects of the world (dynamics that both exceed our understanding and do not depend upon us) do play a critical and underappreciated role in Foucault. Deleuze deserves credit for calling attention to it.

Second, while Foucault's lack of work on other philosophers and reticence to cite other scholars in his own publications sometimes has the effect of making Foucault appear sui generis, Deleuze's drawing of Foucault's work so strongly towards his own opens up possibilities for seeing clearer parallels and influences between Foucault and the other major philosophers and scholars of his time. For example, it is possible to read some of Foucault's formulations of 'force' with Derrida's or Foucault's 'outside' with the notion of 'event' in Badiou. Whatever the drawbacks of Deleuze's ontological translation of Foucault, he does raise the possibility of including Foucault as an interesting interlocutor within the key debates of philosophy in own time.

A third interesting aspect of Deleuze's reading of Foucault is his attempt to draw connections between Foucault's middle and late periods. Deleuze's idiosyncratic development of Foucault's notion of the outside and resistance draws upon formulations from Foucault's late work on ethics and connects this to Foucault's earlier discussion of power, diagrams, institutions, and Panopticisms. This move is rather rare in work on Foucault. Scholars who focus on his late work normally make minimal connections to the earlier period, and frequently those who prefer Foucault's middle genealogical work shy away from engagements with his publications on ethics. Deleuze's presentation of these as part of a consistent if evolving project is a useful counter to the normal periodization and separations of Foucault's oeuvre.

Lastly, as a final word in Deleuze's favor before I discuss some of the limitations of his work, it should be noted that for all of Deleuze's strange readings of Foucault, his twisting of Foucault towards his

own model, and his avoidance of so much of what makes Foucault's work fascinating and useful, Deleuze does provide a creative reading of Foucault that avoids the mechanical repetition of familiar refrains about the key concepts and arguments of Foucault found in most secondary literature. For all its faults and self-indulgence, there is also a sense of adventurism and spirit of intellectual experiment on display here that can be applauded.

However, the book, especially when considered as a book *on Foucault*, suffers from some serious flaws. First, Deleuze's identification of 'power' with virtual relations has some severe consequences for his interpretation of Foucault. The process of an historical emergence, geographical spread, and actual operation of power described at length in Foucault's *Discipline and Punish* receive very little discussion. Primarily because he wishes to locate the most decisive dynamics at a more elementary ontological level, Deleuze misses the rich tapestry of power woven by Foucault. Deleuze fails to adequately appreciate the detailed descriptions of how power operates in particular institutions, how these operations vary depending on the institution, and the myriad techniques used to control populations and produce subjects. Placing strategies at the level of the virtual forces and their connections to diagrams has the unfortunate consequence of eliminating analysis of which strategies actual actors are using and why.

Secondly, and relatedly, on the question of technology in Foucault, Deleuze is simply too quick and dismissive of the pivotal role technology plays in Foucault's thought and his analysis of disciplinary societies in particular. Deleuze argues that for Foucault, "technology ... is social before it is technical," "machines are social before being technical," and "material machines have to be chosen first of all by a diagram" (40). The problem arises because the ontological dynamics are stressed in a way that dismisses or overlooks the importance of technology as a structuring force. It is unsurprising to see Deleuze spend no time discussing formulations from Foucault that use the terms 'technology', 'technology of power', or even 'techniques of power'; although these phrases are littered all throughout *Discipline and Punish*, this inattention on Deleuze's part is a result of the projection of his own ontology onto Foucault. Within the framework of Deleuze's thought, the dynamics of a chaotic virtual being actualized has primacy over any object such as technology constituted by this process of actualization. Taking seriously and treating

adequately Foucault's argument about the role of technology in modern systems of power is perhaps the largest sacrifice made by Deleuze for the sake of his primary ambition to push Foucault in an ontological direction.

A third line of critique of Deleuze's work on Foucault points to the absence of the concrete spatial analysis that Foucault does so effectively. Deleuze's ontological reading of Foucault maps out an abstract 'topology' of relations between power and stratified formations. In contrast to the metric spaces of the stratified formations, there are immanent and ever-changing relations that connect the inherent variations of virtual forces with the stabilized formations of the strata. While this cartography of flux and fixity is intended to make the argument that forces of resistance and destabilization are present everywhere—a hopeful message packaged in an abstract box—the lack of engagement with Foucault's analysis of spatial distributions such as exclusions, enclosures, ranks, and hierarchical networks deprives the reader of an appreciation of the complex spatialities of power and the analyses that Foucault makes of them. Perhaps this is meant to be implied and drawn out through Deleuze's presentation of one path of differentiation as being the materialization of the world; and Deleuze does make brief reference to some of these spatialities in his discussion of the Panoptic diagram. But again, in Deleuze, there is a hesitancy or lack of interest in spelling out the details of the concrete, or examining the actual operations of institutions and systems. A topology of flux is a nice addition to our spatial vocabularies, but if the cost is losing Foucault's detailed spatial geometries, then the price should not be paid.

As a last critique, late in the book Deleuze discusses practices of resistance but couples these with an account of the subject. The primary figure of resistance in Deleuze's book on Foucault is a 'subject' that "differentiates itself from the code and no longer has an internal dependence on it" (101). Deleuze bases this project on the argument that there is always "a relation to oneself which resists codes and power" (103). Here Deleuze is providing an ontological ground that is implied or assumed in Foucault's late work, focused on practices of freedom and an ethical aesthetics of existence. For Foucault, one of the most important and perhaps one of the only remaining sources of freedom and resistance was located in the relation one has to oneself, and gaining mastery over this relation and experimenting with its

possibilities was both ethical and political in the most profound senses. The problem with this, and the problem with Deleuze's ontological formulation of this position, is that it still circumscribes acts of resistance within the logic of the person. Here there are strong echoes of what Deleuze elsewhere calls a 'nomadic subject'. While this is an important dimension of resistance (and Deleuze's reading of Foucault as articulating a "right to difference, variation, and metamorphosis" carries intriguing implications for rethinking western notions of 'rights'), there are no, what Deleuze calls elsewhere, 'war-machines' in this book—no collectives engaging in mutually supportive decodings, deterritorializations, and creative transformations. There are no collective political projects; there are not institutionally specific forms of collective resistance; there is no sense that the forces of the outside require complex relationalities with others in order to reach their intense potentials. Employing philosophically astute formulations to limit practices of resistance to the exercises of an individual is merely a sophisticated political solipsism. Perhaps such a focus is actually a subtle critique of Foucault by Deleuze; but it reads too strongly as an endorsement.

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Deleuze's work on Foucault is clever and creative, but also abstract and difficult to a fault. While a reader may not find themselves convinced of Deleuze's ontological model, or convinced that Foucault's work can be bent so easily to fit within its frame, it is a rare experience to read a book on a major, much cited theorist and feel a genuine sense of discovery and provocation. There are undoubtedly major flaws in this work: not only its frequently impenetrable style, but the cost of the ontological translations of Foucault is a significant loss of what makes Foucault so compelling. Deleuze's reading fails to sufficiently include Foucault's exemplary analysis of micro-relations of power, his sense of historical change and history's impact on the present, the details of his analysis of particular techniques, his focus on particular institutions and the parallels and subtle differences between institutions, and the myriad specific ways in which relations of power are disrupted, dysfunctional, resisted, and forced to innovate to maintain their hold on bodies. All of this is bled out of Foucault for the sake of raising into prominent relief an abstract ontological model that may call attention to points of Foucault often overlooked, but is

becomes utterly alien to Foucault if presented as the primary stakes and importance of his work. To Deleuze's great credit, his work's main effect, at least on this reader, is a strong desire to read Foucault once more, to read him differently, though that includes differently than Deleuze.

Chapter 4: Fighting Crime in Real Time: NYC's Real-Time Crime Centers, the Decline of the Disciplines and the Emergence of Control Programs

After a man was shot on the streets of Jamaica, Queens, in October 2005, detectives turned to the tattoo database for help. The victim had told investigators that the gunman was a black man who appeared to be in his late 20s. He had a tattoo on his right arm with the word "boo" and an image the victim could not make out.

The investigators called a detective at the Real Time Crime Center. The detective fed the word "boo" into the database. In just a few clicks, the detective found 28 men in the city who had been arrested with a "boo" tattoo. The detective then narrowed the results to seven men who had lived in Queens or had been arrested there.

The detective sent the names of the men back to the investigators, who took photos of the men to the victim. He, in turn, picked out the suspect. With the home address from the crime center, the investigators traced the man and arrested him.

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--Michael Schmidt, "Have a Tattoo or Walk with a Limp?

The Police May Know," *New York Times*, 2/17/10

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The vignette above is taken from an article on the operation of the Real Time Crime Center in New York City, a high-tech anti-crime system intended to integrate and enhance the department's information collection and analysis in order to respond quickly to crimes or even anticipate them. New York City's Real Time Crime Center and Lower Manhattan Security Initiative, begun in 2005 and 2007 respectively, are at the cutting edges of contemporary crime control. The Real Time Crime Center is a city-wide anti-crime surveillance and data analytics system that updated the department's information technology and software, integrates department-wide records databases and closed circuit television feeds, and is coordinated through a central analytics hub located at 1 Police Plaza. The Lower Manhattan

Security Initiative is a public-private anti-crime and anti-terror surveillance network that monitors and patrols the 1.7 square mile zone below Canal Street with CCTV cameras, license plate readers, radiation detectors, and enhanced police presence, including on-call SWAT teams.

The adoption of new technologies by police forces has been critical in their efforts to develop new methods of policing contemporary urban areas. Technological and software changes have impacted police departments in fundamental ways. As police forces have updated their technological infrastructures and devices, they have altered their tactics and policies to better leverage these new technological capabilities. Extraordinary increases in computing power, in particular the integration of large databases and advanced analytics, have made information-led, aggressive, and predictive policing the norm among big city police departments. Big data has driven big changes in policing.

Both of the RTCC and LMSI exemplify many of the most important trends over the last several decades that have transformed police departments around the country: private companies such as IBM and Goldman Sachs have played critical roles in the design and operation of these systems; advanced analytical, mapping, and simulation software systems have sped the department's shift towards intelligence-led, proactive policing; immense databases and composite profiling procedures have enhanced actuarial assessments and risk reduction strategies; and many of the tactics and technologies associated with these centers, as well as the design of the centers themselves, display clear influences of a rising militarization of contemporary police forces. These centers are now being used as models for similar centers under construction around the country. The operations of the RTCC and LMSI may only cover New York City, but their significance is far larger.

This chapter argues that the RTCC and LMSI not only exemplify the most important recent trends in policing, but are also indicators of the ascendance of a new ensemble of techniques and rationalities of control. The RTCC and LSMI are significant examples of these new control logics, or what I call *control programs*, as well as their specific emergence and incarnation in institutions of contemporary policing. In addition, both of these systems parallel transformations in the techniques of control within other types of contemporary institutions and systems such as health, education,

transportation, logistics, and marketing. Drawing upon, developing, and amending portions of Deleuze's "control societies" thesis, I argue that a set of *control programs* have emerged as the preeminent matrix of control in contemporary institutions and systems. These control programs, with advanced information and surveillance technologies and software programs at their core, have shifted away from the hierarchical observation, normalizing judgment, and examinations of the disciplines to systems that *track* our movements through distributed sensors and multiple spaces, *profile* us in information-rich databases for the purposes of prediction, and *assess* us for risk, access, and optimization.

While numerous parallels can be drawn between the operation of control programs in the RTCC, LMSI, and other key institutions and systems, this chapter also takes seriously several lessons from Kevin D. Haggerty and Richard V. Ericson concerning the need to be attentive to institutional-, system-, and technologically-specific incarnations of surveillance and control techniques (2006). Their lessons on institutional specificity, polymorphism, and interconnections strongly echo the insights from the variegated paradigm developed by Jamie Peck, Neil Brenner, Nik Theodore (Peck and Theodore 2007; Brenner et al. 2010). The use of the variegated paradigm can enrich studies of surveillance and control, and this chapter takes some initial steps in that direction. To that end, this chapter seeks to ground an articulation of control programs in a specific institution (policing, NYPD) and systems (RTCC, LMSI), to emphasize the specific institutional conditions and trajectories that have contributed to the coalescing of control programs, and to draw connections and differences to the tracking, profiling, and assessments in various other institutions and systems.

This chapter is divided into three sections. The first section consists of a summary of the recent transformations within contemporary urban policing, with a particular emphasis on how new data-driven technologies and advanced software have altered departments' capabilities, policies, and tactics over the past couple decades. The second section provides a description of New York City's RTCC and LMSI and demonstrates their exemplification of these recent developments in policing, in particular how these crime centers are actively integrating advanced information systems and using these innovations to rethink the organization, policies, and tactics of policing in New York City. The third section argues that while the

RTCC and LMSI retain some features similar to those of the disciplines and panopticisms analyzed by Foucault, ultimately a disciplinary or panoptic framework is an insufficient model to analyze these new centers due to the critical role of advanced information, communication, and surveillance systems as well a new core set of control techniques. Instead of disciplinary logics, this section advocates for an understanding of the RTCC and LMSI (and similar contemporary systems) under a rubric of 'control programs'. This section explains the choice of the term 'control programs', differentiates their basic techniques (tracking, profiling, and assessments) from those of the disciplines, and notes a number of operational parallels between the RTCC and LMSI and marketing firms, informated workplaces, public transportation systems, logistical networks, medical facilities, and credit reporting agencies.

Prominent Trends in Contemporary Policing

Control programs of tracking, profiling, and assessment can be found in a wide variety of contemporary institutions with diverse institutional missions and agendas. Studies of surveillance, particularly those inclined to generalized observations about wide-scale social changes or epochal shifts must also remain sensitive to the incredible diversity of the uses of particular technologies. Particular institutional histories and projects play pivotal roles in the generalized proliferation of surveillance systems (Haggerty and Ericson 2006). Institutional variation is not an historical aberration on a determinist march toward convergence; different institutions utilize technologies for different purposes and projects, and this variegated multiplicity of aims, agendas, instruments, and evolution is a constitutive feature of contemporary surveillance-saturated societies. It is vital that we appreciate that diversity and account for the emergence of new forms of control within the institutional- and system-specific conditions of their emergence. Hence the importance of contextualizing the RTCC's and LMSI's adoption of logics of control programs within the history and recent transformations of contemporary policing (and the NYPD in particular).

Urban police departments have undergone sweeping changes in their tactics, technologies, and organization during the last several decades. These police forces have had to adapt to dramatic changes:

the volatility and polarization of economic restructuring; the shifts towards neoliberal policy packages

that reduce government social service expenditures and economic regulation; the latent paranoia, frequent

panics, and occasional acts of terrorism; the neoconservative (though often bipartisan) expansion of

aggressive policing associated with the War on Drugs and the criminalization of poverty; substantial

shifts in the demographics of city spaces, with the return of elites from the suburbs, influxes of

immigrants, growing densities of concentrated poverty, and rampant gentrification; and lastly,

extraordinary leaps in technological and software systems that have considerably increased

communication, information, and surveillance capabilities. Each of these processes has intertwined with

innovations in the policies, technologies, and practices of policing.

Over the last several decades urban police departments across the country have been collectively

reshaped by the emergence of six trends: proactive policing, intelligence-led policing, actuarial

rationalities, crime mapping, privatization, and militarization. Police departments have adopted different

clusters of these technologies and methods at different paces, to different degrees, and for varying

reasons. Yet each of these trends draws upon and contributes to the increasing utilization of sophisticated

information technologies by the police. Collectively, these trends served as the policy and technology

foundations for the RTCC and LMSI, as well as spurs to the spread of the techniques of tracking,

profiling, assessments that define contemporary control programs.

First, contemporary police forces have moved away from traditional, reactive, 9-1-1-call response

style policing towards more aggressive, proactive policies (Garland 2001, 169). Rather than waiting for

crimes to be committed or complaints to be filed, police now aim to develop policies and tactics that

reach out into communities and prevent crime before it happens. These policies often entail the targeting

of specific groups, disproportionate responses to minor crimes, and tactics that blur the line of legal limits

related to privacy and use of force. Increased knowledge about a community and consistent presence

within it is designed to help officers identify and target disruptive elements and defuse any conflicts with

the potential to spiral into violence. Several prominent policies are indicative of this trend. Quality of life

policing, building off the Broken Windows theory formulated by George L. Kelling and James Q. Wilson,

consists of targeting minor criminal activity to decrease the signs of disorder within a community and increase the capacity of a community to enforce its norms against mischievous behavior (Kelling and Wilson 1982). Community policing requires officers to establish contacts with communities through long-term assignments in specific communities, close relations with community leaders, and an emphasis on information sharing between the community and the police (Tilley 2003). Such sustained relations and intimate knowledge is meant to help police gain the trust of the community, especially in those communities hard hit by crime and with long-running (sometimes decades deep) tensions between the community and the police.

Second, police forces have shifted towards models of decision-making informed by diverse and increasingly sophisticated information gathering and analysis. This includes updates to underutilized or outdated systems as well as expansions of already present programs or technologies. Intelligence-led policing builds upon traditional sources and types of information such as data collection after arrests, undercover officers, informants, and witness and suspect interviews (Marx 1988; Parenti 2003). But police departments are updating their computer systems, shifting away from the paper files where this traditional information had been kept, towards digital file storage systems that dramatically improve data quality, access, and analysis (Nunn 2001b).

Local police departments have also been a key part of a widespread and large-scale implementation of Closed Circuit Television systems (Norris and Armstrong 1999). As the technology has improved and prices have been reduced, CCTV has come to be considered a sophisticated, effective, and cost-efficient instrument of crime control. Powerful coalitions have emerged to both supply and demand these systems: private security and technology firms aggressively market their products, federal agencies tie funds to anti-terrorism technology purchases, and inner city businesses and governments are desperate for swift and permanent safety measures to maintain public order and attract or retain investors (Graham 1998).

Many departments are now updating and expanding their biometric identification, financial tracking, and computer activity analysis. Not only are they digitizing traditional biometric systems such as

fingerprint collections, but police forces are also increasing their collection of DNA samples and improving their analysis techniques, while rolling out new biometric identification systems such as facial and behavioral recognition software (Nunn 2001a). Urban police departments are also developing more effective means of tracking financial flows in order to track and target suspects, gang activity, and organized crime. Computer and Internet activity has also become a new focus of local police investigations, with social media sites providing leads and evidence for crimes and computer file analysis more frequently serving as a core feature of investigations of crime and scenes and suspects (Weiss 2013).

In addition to new technological developments, intelligence-led policing has been strongly associated with major changes in relations within and between organizations. Driving much of the recent increase in the amount and diversity of information that police draw upon is the development and dissemination of Compstat (Silverman 1999; Eterno and Silverman 2005). Implemented in New York City in 1995 under Police Chief William Bratton and now practiced in police departments throughout the country, Compstat utilizes computerized crime data, mapping, and analysis to improve tactical responses to recurring or emerging crime trends. Regular meetings between department chiefs and top brass review the recent statistical and geographical data on crimes as well as the tactical decisions made by department chiefs and personnel under their command. Compstat is intended to enhance accountability, spread best-tactic policies, and reduce crime by leveraging new information technologies. New technologies have made possible diversified and intensified forms of information collaboration among law enforcement agencies. Meanwhile new or more prominent threats (such as terrorism, crime-related internet activity, and financial crimes) have provided added motivations for law enforcement agencies to more consistently and effectively collaborate, both horizontally (within departments and between departments in different cities) and vertically (with diverse kinds of agencies at the local, state, federal, and even international levels increasing their cooperation) (Silverman 1999; Nunn 2001a).

Third, actuarial crime prevention techniques and strategies have become a prominent aspect of the analysis and decision-making processes of police departments around the country (Feeley and Simon

1992). This trend is a result of a migration of models and techniques from the insurance and financial industries, one of the many ways that corporate philosophies and practices have spread through public police forces (Reichman 1986). The focus of actuarial policing methods is on utilizing new technologies and software to assess, predict, and reduce risk. In this paradigm, crime is normalized as an inevitable fact of social life, individuals are reduced to risk profiles consisting of combinations of variables associated with different categories and levels of risk, and law enforcement focuses on the prevention and regulation of future behaviors (rather than judging, understanding, and addressing their past causes). In part this indicates the spread more sophisticated statistical modeling programs within police departments. These modeling programs are capable of analyzing large amounts of information, identifying non-obvious patterns, and predicting future events. These calculations now determine policy changes and tactical deployments. Police departments are attempting to stay ahead of the crime curve: instead of a reliance on reactive policing and a focus on the detection, apprehension, and prosecution of individual crimes, police forces are attempting to leverage new analytical capabilities to address persisting and emerging problems by becoming more pattern-oriented, predictive, and targeted (Maguire 2000).

These developments indicate a shift of police policies "towards a concern with prevention, harm-reduction, and risk management. Instead of pursuing, prosecuting and punishing individuals, it aims to reduce the supply of criminal events by minimizing criminal opportunities, enhancing situational controls, and channeling conduct away from criminogenic situations" (Garland 2001, 171). Police departments now more aggressively seek to modify routines, environments, and the structures of incentives in an effort to pre-empt the emergence of criminal behavior. Situations are altered to make them less vulnerable targets to potential criminals. Such tactics have been called "situational crime prevention" (Clarke 1995). Police departments increase the effort, increase the risk, or reduce the reward. They increase the effort needed to commit crimes through such tactics as target hardening (e.g. locks), access control, deflections of offenders (e.g. closures), and controls of facilitators (e.g. gun laws); they can increase the risk by imposing screening at entries and exits and conducting surveillance at key locations or on targeted groups; and they can reduce the reward through policies that remove targets and inducements (Clarke

1995). Such tactics to reduce risk, minimize opportunities, and prevent crime have become common practices in urban police forces throughout the country.

Fourth, over the last decade, law enforcement agencies have increasingly integrated several different kinds of crime mapping to aid their more proactive policies. While the geographical plotting of crimes has long been used by police forces, recent advances in geographic information systems have made possible more dynamic, fine-grained, and accurate mappings of criminal activity. Some of the technologies and practices that have emerged around this spread of mapping include Compstat (meetings among high ranking police officials that focus on the analysis of crime maps and assessments of chosen tactics), hot-spot policing (the identification of problem areas and the targeting of police resources), real-time mapping (including the relaying to field officers of maps of emerging crime incidents and patterns), and simulations (agent based or extrapolative modeling that can predict future crime and 'test' responses prior to implementation) (Weisburd and McEwan 1997).

Fifth, policing has been increasingly privatized. Private companies currently have unprecedented prominence in contemporary policing for a variety of reasons and in diverse roles. Some of the privatization of policing is driven by the general privatization of government functions following the emergence of neoliberal rationalities of government. Many policy-makers, for ideological and cost considerations, favor options provided by private companies. In addition, many communities and localized corporate coalitions (such as Business Improvement Districts) have turned to private security options as a means to supplement public police forces (Hier et al. 2006). Police departments on their own have also begun leaning heavily on private companies due to the enhanced sophistication, complexity, and cost of the latest technologies and software programs. Such tools cannot be developed in-house, and their implementation, both initially and long-term, often depends on private companies supplying training and oversight. Private companies play critical roles in the sourcing, integration, and long-run operation of the surveillance, communication, data analysis, and mapping programs police departments are increasingly turning towards for technological fixes to contemporary crime problems. Fears of terrorism in particular are pushing many police departments in large urban areas to form alliances with private

companies, such as telecommunications, financial firms, and information brokers. Most of these alliances happen more directly and intensely at the federal level, but local police departments have increased their own connections to private firms and also increasingly drawn upon federal resources during cross-agency cooperation and special task forces (O'Harrow 2006). Lastly, private companies are now critical providers of prison facilities. The coupling of neoliberal government reductions and preference for private sector solutions with a neoconservative tough-on-crime agenda have helped produce large prison populations and market opportunities for private prison companies (Gilmore 2007). Policies such as proactive policing, zero-tolerance, Three Strikes, Stop-and-Frisk, and a general policy climate that some call a New Jim Crow, have swelled prisons (Alexander 2010). The warehousing of massive populations in extensive prison systems has become a central tool of contemporary policing and a boom industry for private firms.

Sixth, police departments have increased their purchase of military technologies and their adoption of military tactics and organization. As western militaries, especially that of the US, have increasingly conducted urban warfare, the technological equipment developed for wars in these spaces have proven attractive and transferable to urban police departments in the US (Graham 2006; Graham 2010). Tactics have transferred too: proactive, intelligence-led, and order maintenance policing often take the form of para-military style operations (Parenti 1999). Organizationally, police departments have adopted military style command centers, swat teams modeled on small-scale military units, and departmental divisions based on military organization charts (Kraska 2001).

The Real-Time Crime Center and The Lower Manhattan Security Initiative

Frequently the innovations in technology and tactics outlined above begin in New York City. Many of the political, economic, and demographic transformations of contemporary urban areas are particularly intense in this city. Innovations in policing have been intimately tied up with its economic restructuring, its gentrification, and its prevalent fears of terrorism. Due to these conditions, its large size,

and its influential chiefs, the New York Police Department (NYPD) has served as the preeminent and most imitated police force in the United States. Its policies, technologies, and practices are often at the cutting edge of crime control.

The recent constructions of the Real-Time Crime Center and the Lower Manhattan Security Initiative continue this trend. Both the RTCC and LMSI reflect shifts towards more proactive policing, a focus on information collection and analysis, risk reduction strategies, and military tactics and technologies. Particularly important have been the substantial number of public-private partnerships that have helped the NYPD design, set up, and operate the RTCC and LMSI. These two anti-crime systems, then, are symptomatic of the most important recent developments in contemporary policing, serving as both notable examples of these trends as well as clear advances in their integration and technological sophistication.

These advances are driven by the integration into police departments of big data analytics, new information and communication systems, new mapping programs, and recent developments in simulation technologies. This suite of new technologies and software are transforming the techniques and rationalities of a myriad of institutions and systems of contemporary life, paralleling many of the changes in other institutions and systems such as militaries, demographics, transportation systems, retailing, credit reporting, and online social media. Such pervasiveness and parallels of new technologies and tactics have collectively contributed to the ascendance of a new preeminent ensemble of techniques of control, or what I call control programs—techniques of tracking, profiling, and assessment. As in many other contemporary institutions and systems, the RTCC and LMSI use dispersed sets of databases, sensors, and interfaces to track the immediate and long-term movements of individuals; they match information on individuals to produce predictive profiles of their tendencies and social networks; and they use these networked automated programs of tracking and profiling to assess the probable relations, positions, kinetics, and risk levels of individuals.

While the RTCC and LMSI are exemplary illustrations of the emergence and operation of control programs within contemporary institutions, considering the distinctive conditions, motivations, key

features, and consequences of the RTCC and LMSI can help us appreciate how the pervasive spread of control programs is the result of particular institutional histories of decisions by key figures to utilize these new technologies and tactics to respond to institutional-specific breakdowns, inefficiencies, and possibilities.

New York City's Real-Time Crime Center

The Real-Time Crime Center began operation in 2005 at an initial cost of $11 million funded by the NYPD budget, the Police Foundation, and federal anti-terror funds. The NYPD leaned heavily on private companies, especially IBM, to develop and help implement the new technology both in the Crime Center and in the field (D'Amico 2006; NYC Global Business Partners 2010). A sophisticated anti-crime computer network was established in partnership with IBM Business Consulting Services, which helped build and implement an immense Data Warehouse, an advanced data and video analytic system, and the Data Wall that serves as the coordinating center of the RTCC.

The construction of the RTCC was part of an initiative to overhaul the department's information infrastructure; a plan advocated for by then Police Commissioner Raymond Kelly, supported by then Mayor Michael Bloomberg, and overseen by the department's first Chief Information Officer, Jim Onalfo. Kelly recruited Onalfo to be the NYPD's first CIO in July 2005; Onalfo had previously been an information technology expert in the private sector and formerly served as the CIO of Stanley Works and Kraft. Kelly convinced him to join the NYPD to conduct a comprehensive overhaul of its information collection, storage, analysis, and dissemination. The intention was to leverage new communication, information, and mapping technologies to make the NYPD a more effective intelligence-led, proactive police force. The RTCC was the culmination of these efforts: a high-tech, twenty-four hour central hub of massive information collection, multi-dimensional analysis, and fast and effective dissemination to officers and investigators in the field.

Challenges and Goals

The NYPD faced a series of interconnected challenges in overhauling its IT infrastructure. Quantity of information intake itself had not been a problem for the NYPD; rather, organizing these incredibly large and diverse streams of information had been one of the critical challenges, especially in recent years (Greenemeier 2005). As new technologies became operational, they multiplied the size and diversity of the streams of information within an institution already dealing with massive amounts of daily information production. The diversity of advanced technologies and software associated with the RTCC (including innovative data analysis, mapping, and visualization programs) were intended not only to centralize these information streams, but integrate them into information packets immediately accessible, understandable, and useful for investigators and officers in the field (IBM 2006a; ABM 2006).

Notwithstanding the earlier implementation of Compstat, prior to the IT transformation led by Onalfo and IBM, departments were still primarily reliant on paper records. This dependence on paper slowed information gathering, access, and review. The sophisticated software systems associated with the design of the RTCC accelerated the digitalization of department's past and current records begun with Compstat. This digitization was intended to streamline access and substantially reduce the amount of work that officers needed to dedicate to low-value information gathering and analysis (Mekeel nd). In part due to its dependency on paper records, the department also struggled with a debilitating fragmentation of their records (IBM 2006a; Beizer 2005). Department records remained uncentralized and uncoordinated, siloed within various databases and file systems spread over a Byzantine network of different departments and units. Tracking down information in its various locations proved an immense burden on investigations. Even as the department integrated more technology, including CCTV systems and a suite of technologies associated with Compstat, many of these information packets remained the province of individual departments. Siloed data systems prevented more active information sharing among compartmentalized departments, let alone with other agencies and institutions. The RTCC was designed to break down these information silos, centralize information collection and assessment, and better

coordinate investigations and tactical responses between boroughs, precincts, units, and special task forces (IBM 2006a; D'Amico 2006).

The operational architecture of the RTCC was also meant to achieve an increase in the speed of analysis, an improvement in data quality, and greater support for proactive and predictive policing (IBM 2006a). The NYPD wanted to draw upon the deep data mining of big data analytics but also quickly translate that information into actionable intelligence for officers in the field. Developing high-speed and information-rich investigative practices offered the potential to more quickly respond to crimes and prevent new ones from happening. The improved quality of data was critical as well. Advancing data mining techniques could coordinate department-wide access to the department's dispersed databases as well as interlink these databases with those of state and federal law enforcement. Such deep and diverse sources of data made possible more holistic data analysis (NYC Global Business Partners 2010). Such improved data integrity and richness could provide officers with better suspect profiles, leads, risk assessments, and resource awareness. Not only could the decision-making of officers and investigators be improved, but precinct commanders and departmental brass could more quickly and effectively assess the success or failure of tactical changes to better respond to emerging crime patterns (IBM 2006a). The key programs that have made possible these advances in information analytics and police practices are the Data Warehouse, Data Analysis systems, and the Data Wall located at 1 Police Plaza.

Data Warehouse, Data Analysis, and Data Wall

The data warehouse serves as the information infrastructure of the RTCC. To develop the Data Warehouse, the NYPD collaborated with IBM Global Services. The system was designed to sit atop the databases scattered throughout the different departments, divisions, units, precincts, and units, integrating them into a common searchable system (D'Amico 2006). Department-wide data on arrests, crime patterns, complaints, summonses, and incident reports were made available to all officers through requests to the RTCC. The information systems that it mines include: the recidivist database from correctional facilities and courthouses; more than five million New York State criminal records; more

than 20 million NYC criminal complaints and emergency calls; more than 31 million national crime records; and more than 33 billion public records (D'Amico 2006; IBM 2006b). In addition to these already constituted databases, officers have been instructed to take even more detailed notes than before (to mark down such traits as tattoos, body marks, teeth, gait, and skin conditions) and to enter all such observations into the computer programs interlinked into the RTCC network (Schmidt 2010; Lueck 2007). Such changes were also intended to encourage officers to feed copious amounts of information into the system, confident that the program will sift the data, make connections, and determine the relevance and value of the data for a past, current, or future investigation. These databases can now be searched simultaneously and swiftly by contacting the RTCC from a multitude of access points within departmental offices, out in the field through new computers in police cars, and a growing number of high-tech vans with roving investigative units.

The Data Analysis dimension of the RTCC is principally composed of a sophisticated software programs that consist of advanced data mining and various visualization packages. After IBM Global Services had set up the system of interconnected databases that make up the Data Warehouse, the NYPD worked with a private IT company called Dimension Data to develop a "customized pattern database" (D'Amico 2006). This diagnostic data-mining program is capable of running multi-layered, instantaneous analyses of the department's stored data. As part of the transformation, the NYPD adopted business intelligence tools, such as Reportnet 1.1 and Accurint Pro (Johnson 2005). These programs make possible precise extractions and connections between information often buried deep in multiple databases. In addition to this improved data mining, the system also uses advanced GIS and visualization tools. The department now utilizes such programs as MapXTreme Java and MapInfo Pro, which provide satellite imaging of crime scenes and digital mapping of crime incidents and trends (Johnson 2005). The most important mapping program used by the NYPD is called Prochart, a visualization technology created by ABM America, a global security firm that works with national and local law enforcement agencies to integrate or improve their use of information technologies (ABM 2006). Prochart is able to integrate information from multiple department databases and various types of media such as pictures, video clips,

and CCTV footage. Prochart's algorithms and visualization techniques (including graphing, mapping, and simulation) are effective in making connections among information stored in department databases as well real time incoming information. The graphical displays of Prochart can often reveal non-obvious connections between incidents and suspects. The displays also help officers more quickly understand information and makes communication to field officers of large amounts of data more effective. This significantly reduces the time spent searching for information, deducing connections, and predicting movements of suspects or emerging crime patterns. Prochart's visual techniques are critical especially early in investigations or during police searches since they are capable of providing aerial photos of crime scenes, real time and simulated images of moving suspects, maps of pertinent crime information, and notifications of nearby police resources.

The operational center of the RTCC system is a highly sophisticated Data Wall located in a room at 1 Police Plaza in lower Manhattan. The Data Wall is a two-story-sized screen (somewhat akin to a movie theater screen broken into 18 smaller screens) that displays maps, diagrams, satellite images, surveillance camera feeds, and archived photos. The center is staffed twenty-four hours a day by about forty detectives and analysts working collaboratively at fifteen workstations. The Data Wall of the RTCC is the central information hub, the point at which the sophisticated databases and analytical software of the Data Warehouse and Data Analysis are most directly brought to bear upon the queries, tactics, and investigations of officers in the field. An officer will contact the RTCC and send details of a new crime or make a request for information; the Crime Center experts will then use analytical software to mine the departments' databases and video footage, seeking any data or images that may provide insights into particular suspects, single crimes, or patterns of criminal activity. The product of the analysis is then digitally sent out to the field officers. The interconnected and updated databases, the advanced data mining, the visual techniques, and the coordination capabilities of the RTCC have thus become an integral and powerful tool for the NYPD to improve its speed and effectiveness.

Lower Manhattan Security Initiative

Begun in 2007, the $200 million Lower Manhattan Security Initiative is a public-private surveillance network that originally covered a 1.7 square mile zone below Canal Street, an area that includes the New York and American Stock Exchange, the Federal Reserve Bank, and City Hall. The LMSI is a product of increased federal funding for anti-terrorism efforts, an unprecedented multi-agency law enforcement effort, and a unique partnership among public and private entities including corporations such as Goldman Sachs that own buildings and offices in the area.

The LMSI is one of the main projects of the NYPD's Counterterrorism Bureau, a specialized unit that is the first of its kind in the country. According to the mission statement for the Bureau, the NYPD was initially motivated to develop counterterrorist capabilities after the terrorist attack on September 11th, 2001, and after it became clear that the defenses provided by the federal government would be insufficient. "Since then, the Counterterrorism Bureau has been at the forefront of this new aspect of municipal policing: counterterrorism for local law enforcement. The mission of the Counterterrorism Bureau is to develop innovative, forward-looking policies and procedures to guard against the threat of international and domestic terrorism in New York City" (NYPD nd). Federal investments have been critical for the project. Post-9/11 spikes in federal funding for anti-terror initiatives, including some $32 million in funds from the Department of Homeland Security and another $77.7 million in other federal funds, were vital to the early efforts of the NYPD to overhaul its anti-terrorism policies and fund the creation of the LMSI. Additionally, the NYPD partners with the FBI in the Joint Terrorism Task Force, which includes the sharing of personnel, training, information, and funding for special investigations. The information sharing in particular has been crucial, as the NYPD has not only shared its own information with various federal agencies through the program, but has also been able to draw upon the databases and information technologies of these other agencies.

Local private companies and government institutions have also been important partners. The LMSI is a public-private partnership focused on shared security concerns. Many of the nation's top banks

and financial institutions are concentrated in lower Manhattan. Some of these companies and institutions became early collaborators with the NYPD in designing, funding, and implementing the LMSI (Greenemeier 2011). These companies and governmental institutions are considered 'stakeholders' in the Initiative. The Initiative began with fifteen such stakeholders (and has since grown to thirty with the Initiative's expansion into Midtown), including Goldman Sachs, the Federal Reserve, the New York Stock Exchange, the American Stock Exchange, and City Hall. Each of the stakeholders shares aspects of its security systems (in particular their CCTV feeds) with the LMSI and conduct some regulated information sharing on matters relevant to the security of Lower Manhattan (Greenemeier 2001). Each of the stakeholders also runs a workstation at the analysis center that serves as the coordination hub for the program.

The center is staffed twenty-four hours a day by NYPD officers and security personnel from the private corporations and public institutions that are contributing CCTV feeds and funding (Shachtman 2008). The current plan is to eventually expand the CCTV system to around 3000 cameras, concentrating a dense web of interconnected cameras over the area of Lower Manhattan. Officials in the center are able to control the zoom and angle of select number of cameras in order to monitor suspicious people (e.g. loiterers), unattended packages, and vehicles (e.g. those circling repeatedly or going the wrong way in traffic) (Greenemeier 2011). Threats against infrastructure are given high priority; as a result, early extensions of the LMSI's camera systems were made to Penn Station and Grand Central Station (Hays 2011). These cameras cover the turnstiles, platforms, tracks, and entrances to subway tunnels. The LMSI's 'Operation Sentinel' records and analyzes all traffic moving into Lower Manhattan'. Operation Sentinel is a multi-dimensional surveillance system focused on protecting the bridges, tunnels, infrastructure, and roads in Lower Manhattan from terrorist attack. It photographs every vehicle entering lower Manhattan, scans the license plates, and checks radiation levels. Advanced algorithms constantly analyze the data and visual feeds, alerting officials to any potential threats. In addition to the camera, information, and radiation detection systems, the LMSI includes a series of supplemental policy and

tactical enhancements in the area, including increased police presence, the construction of more roadblocks, and mobile, on-call teams of specially trained and heavily armed officers.

Expansion

While the RTCC and the LMSI have been beset by cost overruns, missed timetables, and challenges by privacy rights groups, the two programs continue to expand, both technologically and geographically. In terms of its technologies and daily operations, recent expansions include: continued efforts to digitize department records from past decades; increasing the number of police officers and vehicles with wireless laptops and handheld GPS devices; improvements in the CCTV systems of both the RTCC and LMSI, including integrations of recent advances in real-time photo technology; the building of a city-wide wireless network for use by the police; the creation of new biometric identification systems, in particular expansions to the recently created Facial Recognition Unit; the integration of information and photographs from online social media sites for use in police data searches, crime investigations, and criminal profiling; and the adoption of new 3-D visualization technologies that are enhancing the mapping and simulation capabilities of the RTCC and LMSI.

Both systems are also spreading geographically. The Security Initiative has begun an expansion into midtown Manhattan and has established a series of new public-private partnerships with businesses located in the area. The RTCC has expanded its number of cameras throughout the five boroughs. These two systems are also collaborating more with each other, with increasing information exchanges on issues of crime and terrorism. Meanwhile the Crime Center has become a 'best practice' for urban police forces to imitate and has now spread to multiple cities throughout the US. The quick diffusion of similar systems (especially the RTCC) to other urban areas indicates that the NYPD still serves as the source for 'best practices' for American police departments and also demonstrates similar conditions and demands in other urban areas. Itself originally inspired by London's Ring of Steel, cities such as Memphis, Houston, Chicago, Boston, Los Angeles, Oakland, Austin, and Albuquerque have all followed New York City's

lead and created Crime Centers that utilize extensive CCTV systems, new information technologies, and advanced mapping software.

In Boston the program has been called the "nerve cell of operations" by the Police Commissioner (Cramer 2010); in Chicago, initial problems with funding and infrastructure have been overcome and now a Predictive Analytics Group operates within the department's twenty-four hour 'fusion center' and produces multiple daily granular reports and strives to develop a "real-time architecture" for proactive, intelligence-led, predictive policing (Shachtman 2008; Main 2011); in Los Angeles, the Real Time Analysis and Critical Response (RACR) Division has partnered with UCLA researchers to develop real-time crime tracking and mapping programs that Chief Charlie Beck has dubbed "the brains of the department" (CBS Los Angeles); in Houston, the RTCC has been called "the centerpiece" of a shift towards high-tech policing (Chow 2010); and recently in Oakland, the city council passed a resolution to build a Domain Awareness Center modeled after RTCC's in other cities that would integrate the city's traffic, police, and fire dispatch systems as well its crime mapping programs, gunshot-detection systems, and alarm programs (Kane 2013).

The RTCC and LMSI exemplify the most important current trends in policing. The influence of proactive policies, intelligence-driven decision-making, actuarial analyses, mapping programs, privatization, and militarization are all apparent in the architecture, technologies, and techniques of these two systems. They are at the cutting edge of contemporary crime control and policing. These innovations of the RTCC and LMSI, their exemplification of the major trends in contemporary policing, their geographical expansion, and their status as best practice models of cities elsewhere, all indicate a need for observers to better understand the primary logics and organizational architecture of these systems. But the transformations evident in the RTCC and LMSI are even more widespread and fundamental than changes in policing. The innovations within the RTCC and LMSI are evidence of the dramatic transformations wrought by new information and communication technologies on basic institutions, various infrastructures, and everyday life. Big data has driven big changes in policing and beyond. And at the core

of these changes is the emergence of a new set of sociotechnical mechanisms of control, a new set of control programs that track, profile, and assess.

Control Programs

While Haggerty and Ericson (2006) caution against conceptual generalizations meant to cover all systems of surveillance, they also recognize that techniques and technologies often migrate between systems, operations in different locations and systems often parallel one another, and exchanges and interconnections between systems and institutions are often made. While it is indeed right to eschew grand universal claims that pretend to account for all types and systems of contemporary surveillance, the deepening paths of diffusion, learning, and interdependence among many of the most important institutions and systems of contemporary life do provide significant grounds for considering the possibility of the consolidation of a new general blueprint—particularly if the institutional polymorphism, frequent failures, experimental ethos, and general dynamism of regimes of control are kept in mind. The RTCC and LMSI, as exemplifications of the most important recent trends in policing and as implementers of some of the most advanced information, communication, and mapping technologies, are ideal references for sharpening our conceptualizations of the control mechanisms in the contemporary age.

As Deleuze notes, Foucault recognized that the disciplinary institutions began breaking down post World War II (Deleuze 1992); and so too were the operating logics of the disciplines. With the decline of the disciplines, and the several decades-long spread of advanced information technologies and software packages, the contemporary period is perhaps akin to the time of the emergence and consolidation of the disciplines. The disciplinary mode of power became definitive for modern societies following a variegated process of emergence and an achievement of preeminence relative to other still operating modalities of power. The emergence of the disciplines was not a sudden event, or an immediate unfolding of a fully formed set of power relations. Instead, disciplinary power began as "a multiplicity of often minor processes, of different origin and scattered location" that began to overlap, repeat, imitate, support, and differentiate from each other, and then gradually converge to "produce the blueprint of a

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general method" (Foucault 1979, 138). This generalization of the disciplines did not displace every other type of power relation; instead, its status as the principal modality depended on its ability to infiltrate, interlink, and extend all other modalities (Foucault 1979, 216). The myriad of institutions, such as police departments around the country, now employing the techniques of tracking, profiling, and assessment to monitor and manage individuals and populations is perhaps evidence of the emergence of a new blueprint of power, not disciplines or panopticons, but *control programs*.

Divergences from the Panopticon

Bentham's prison diagram, and Foucault's generalization of it as an epochal paradigm of institutional control mechanisms, has remained immensely influential within surveillance studies (Lyon 2003). And indeed, the RTCC's and LMSI's roles in a criminal justice system, their seemingly centralized location of supervision, their dispersed camera systems serving as instruments of constant visibility, and their large-scale and systematized collection of information, would all suggest at least superficial resemblances to a panopticon. Yet the RTCC and LMSI are not panopticons; though panopticisms have not disappeared. And disciplinary logics have declined; though they still linger. While we must remain sensitive to the continuities, the refunctioning, the amplifications, and the ways that previous elements and mechanisms serve as important precursors of our present systems, significant shifts have taken place in systems of social control, as evidenced by the myriad changes in policing and their exemplification in the RTCC and LMSI. In particular the dramatic transformations in information and communication technologies have meant the emergence of new techniques, rationalities, and systems of social control ill-described in terms of the docile bodies, exercises, examinations, and panopticisms depicted by Foucault.

The RTCC and LMSI display dramatic divergences from the paradigm of the panopticon in terms of their architectures, spaces, and subjects. The authority figures of the RTCC and LMSI are not shrouded in a central, immediate point of darkness: the gaze(s) of power in the RTCC and LMSI are multiplied and dispersed throughout the city through extensive CCTV systems; large information systems are scattered

through the city and have supplanted visibility as the primary instrument of power; and there is frequent use of a roving and suddenly immediate display of power's force and presence (such as proactive and hot spot policing). Also, the architectures of the RTCC and the LMSI are not those of enclosed, single institutions isolating individuals in completely separated cells. The RTCC and LMSI monitor much larger spaces and diverse sites; they monitor movements between locations; and cover the infrastructures and platforms that make much of the movement and social interaction possible within the city.

The subjects monitored by the RTCC and LMSI are also not isolated like the subjects in a panopticon. They are not cut off from a collective and denied horizontal contact. They are immersed and moving; they blend into crowds; they have social networks strung across multiple locations. The architectural apparatus of a panopticon fixed individuals in particular places for enhanced, continuous, certain observation. The subjects monitored by the RTCC and LMSI are not so fixed – indeed, some of the major challenges of the RTCC and LMSI included integrating information on individuals from multiple locations and monitoring the movements of subjects in a variety of manners through a variety of spaces. The information and visual systems brought to bear by the RTCC and LMSI are meant to respond to and take advantage of these challenges. The data systems compile profiles that include past and present addresses of an individual's home and work, family members, known associates, and past criminal activity. The biometric identification systems that are now in their early stages of implementation seek to identify individuals even amidst a moving mass. The simulation technologies can predict future movements, even of multiple targets possibly acting as part of coordinated groups. The RTCC and LMSI neither depend on nor require isolation; they derive information and plan proactive tactics based on their knowledge of movements and networks. The internalization so prominent in the panopticon is also less apparent in the RTCC and LMSI. The subject within a panopticon internalized rules of power associated with regimes of moral reformation and experimental training techniques. No such focused and intense edification exists in the spaces and programs of the RTCC and LMSI. The behavioral regime of the RTCC and LMSI primarily consists of consent to minimal levels of order maintenance and questions of access and exclusion rather than punishment and reformation.

These are significant departures from the panoptic diagram of power. Yet perhaps the most important divergence from panoptic logics is that the disciplines, the operational basis of the panopticon and panopticisms, have declined in importance and no longer serve as the preeminent ensemble of power relations. The core set of logics upon which the panopticon depended—the hierarchical observation, normalizing judgment, and examinations of the discipline—have become the distributed tracking, networked and mapped profiling, and various assessments of control programs. Control programs now serve as the principal modality of power that infiltrate, interlink, and extend all others.

Control Programs

While many theorists (e.g. Gandy 1996, Gray 2003, Simon 2005, Dobson 2007) have developed intriguing arguments that panoptic logics are still predominant in systems of digital technologies, incessant data collection, and immense databases, Haggerty is right to insist that the panoptic model and its core disciplinary logics have been "over extended" into domains and historical contexts for which it is "ill-suited" due to the dramatic changes in "surveillance processes and practices" (Haggerty 2006). The new information and communication technologies associated with big data and contemporary surveillance have dramatically reorganized the sites, methods, criteria, and purposes of social control. It would be more analytically profitable to consider these systems, such as the RTCC and LMSI, not as postmodern, hi-tech panopticons but as examples of a new kind of social control—as systems with quite different instruments and rationalities than those of the panopticons.

Deleuze, in his essay "Societies of Control," has perhaps articulated the most suggestive conceptualization of a shift away from disciplinary logics towards a new preeminent paradigm of social control (Deleuze 1992). According to Deleuze, the operating logics and core institutions of disciplinary societies are breaking down in a terminal decline and being replaced by control societies, or control mechanisms. A series of substitutions mark this shift from disciplines to controls: from sites of

confinement to open spaces; from thermodynamic machines to cybernetic machines; from analogue to digital languages; from factories, production, and concentrative capitalism to businesses, metaproduction, and dispersive capitalism; from discontinuous molds to interconnected modulations; from periodic examinations to continuous assessments; from signatures, registrations, individuals, and masses to codes, access regimes, dividuals, and databanks. Deleuze's short, schematic argument is extremely suggestive; and his description of societies of control should remain a privileged reference for contemporary analysis due to its recognition of the decline of the disciplinary logics and the increased importance of unenclosed spaces, digital systems, information technology, access regimes, and ubiquitous processes of assessment. In many ways, my own articulation of *control programs* is an extension and deepening of Deleuze's argument, but also a selective amendment.

The amendments focus a few points within Deleuze's argument. First, while the shortness of the essay and the schematic structure may contribute to this oversight, Deleuze's presentation of the main logics of societies of control should have recognized that many disciplinary elements have been retained in the present and many of the control mechanisms associated with control societies are transformations— in particular, digitizations—of disciplinary processes. Also, while Deleuze argues that disciplinary institutions are in terminal decline, a better phrasing of this process would be a radical restructuring of these key institutions due to new information and communication technology and software. In light of the geographical and institutional variety of these restructuring processes, awareness of the diversity in the emergence, operation, and evolution of control mechanisms are also needed. A variegated perspective is called for: different systems have transitioned and operated control mechanisms differently. There is also a need for clarity about which of the techniques and dynamics of control societies serve as the privileged set of controls, in particular, which have replaced the predominant set of techniques from disciplinary institutions—hierarchical observation, normalizing judgment, and examinations. Deleuze also fails to note the critical importance of errors and experimentation in the evolution of control mechanisms. Haggerty and Ericson (as well as the Peck, Brenner, and Theodore) stress the importance of considering failure, ineffectiveness, malfunction, and contestation not merely as signs of some inherent limits or

unfairness of these systems, but frequently these facts serve as the learning mechanisms, trial and error processes, and unexpected spurs to system improvements, intensifications, and mission creep expansions.

Control programs is also meant to echo and indicate an indebtedness towards several other accounts and a specific use of the term 'control programs' within computer programming and software design. First, control programs is intended to be a nod towards the historical studies of James Beniger in his book The Control Revolution (1986). For Beniger the emergence of an information society has deep roots in a control revolution associated with the increased amount, complexity, and speed of information production and analysis stemming from the industrial revolution, modern bureaucracies, and expansion of telecommunications. The current centrality of information processing, communication, and control in contemporary telematic societies is, for Beniger, the product of long, crisis-propelled coevolution of various technologies, processes, and institutions (Beniger 1986, 436). Big data may be new, but its history is long. The technologies and techniques of control programs did not emerge all of a sudden and fully formed; much of what is distinctive about the current control paradigm consists of practices and techniques that have become more sophisticated, amplified, and pervasive in the present period. The qualitative and quantitative transformations of these processes in the present period largely results from growing power and ubiquity of more advanced computers and software.

The term control programs is also meant to mark the importance of these changes by alluding to the use of the term within computer science: master control programs as the central operating system of a computer or network that makes possible, regulates, or provides the environment for the operations of other applications and the communication between hubs and workstations (PCMag). As Nigel Thrift notes, the spread of embedded computing programs, and thus the spread of "computationally active environments," has meant an immense "infusion of software into the urban infrastructure" (Thrift and French 2002, 314). From personal communication technologies (with the Internet and GPS), to the operations of key institutions (from police forces to supermarkets, marketing firms, geodemographics and credit reports) to larger systems such as transportation systems and logistical networks, this is an age, as Leo Manovich has phrased it, in which "software takes command" (Manovich, 2013). Software now

plays a ubiquitous, systematic role in the coordination of human behavior. Software also plays an essential, central role in the tracking, profiling, and assessments of control programs.

Tracking

In the present period, distributed tracking has replaced hierarchical observation as the primary method of surveillance. According to Foucault, hierarchical observation within disciplinary systems operated within enclosed spaces (such as factories and prisons), focused on physical bodies in fixed locations (such as prisoners in cells, children at their desks, or patients in their beds), and had a privileged single gaze that strove to see everything constantly (such as a teacher, prison guard, or factory foremen) (Foucault 1979, 170-177). This age of disciplinary controls constructed "'observatories' of human multiplicity" in which the observational techniques themselves induced effects of power; that is, in their very operation, as internal mechanisms of continuous and functional observation, these techniques increased efficiency through monitoring, adjusting, and directing (Foucault 1979, 175-176). Foucault also notes that many of these systems included a spatial nesting or pyramidal network of supervisors that not only watched and directed the docile bodies of their disciplined subjects, but kept watch upon their subordinate tiers of observers (Foucault 1979, 174, 176-177).

In the tracking techniques of contemporary control programs, like those in the RTCC and LMSI, some of these features remain. As in age of the disciplines, observational mechanisms are designed into the operational architecture of contemporary institutions and systems and are critical to the production of information and the increasing of efficiency. For example, the high-tech observatories such as the RTCC and LMSI draw upon visual information such as databases of images, CCTV feeds, and notes written by officers in the field. This visually gathered material allows the NYPD to speed up police operations and maintain sufficient levels of security and safety within their governed spaces. A hierarchy of supervisors also still exists in key institutions; for example, the CCTV feeds of the RTCC and LMSI (including video from officers' patrol cars), coupled with GPS in officers' vehicles, cell phones, and laptops not only make possible rapid assessments of department resources (useful when investigators or officers are responding

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to a crime in progress or about to conduct a risky or uncertain operation), but act as detailed and continuous monitoring devices of police officers by their departmental supervisors.

But definitive differences exist between the hierarchical observation of disciplinary regimes and the tracking within control programs. Tracking works differently: bodies moving multi-modally through channeled spaces are tracked and overcoded through interactions with the multiple and dispersed interfaces of decentralized digital information systems managed by hubs of coordination and control. Internet companies, logistics operators, militaries, geodemographic firms, and infrastructure providers have been some of key innovators of contemporary tracking techniques. The RTCC and LMSI also exemplify institutionally specific incarnations of distributed tracking programs.

Overcoded Mobile Bodies

The primary object of surveillance ceases to be a proximate body confined to a particular location (as in the disciplines) and instead becomes data points left by mobile bodies moving in multiple ways, interacting with their environment (especially with machines and information technology), and leaving behind informated tracks such as transaction generated information or cell phone call records. The enclosed spaces of the disciplines have become the channeled spaces of tracking: the spaces are not 'open', but rather are routed, with multiple options, and the systems trace and code the choices and paths of the digitally observed. Internet companies, in particular Internet advertising firms, have developed perhaps the most sophisticated (in terms of stealth, volume, and detail of information) tracking mechanisms (Levy 2011). The use of cookies to identify users and track their movements from page to page and site to site has been a boon to online business. Geo-locational technologies, especially in cell phones and other mobile devices, have also increased the presence and sophistication of tracking technologies. Social media, mapping applications, and telecommunications companies have all benefited from the tracking of users of mobile devices. Logistics networks use RFID tags, GPS, and satellite systems to track packages, stock, freight, and vehicles as they move through factories, ships, trains, trucks, distribution centers, and stores (Bonacich and Wilson 2008). The new high-tech, high-flow,

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granular, information-rich logistics systems run by large retailers such as Wal-Mart have become central

to organizing contemporary economies (Lichtenstein 2009). The Real Time Crime Center and Lower

Manhattan Security Initiative also both collect and analyze the informated tracks of individuals and

follow their movements through channeled spaces. In particular, their CCTV systems and license plate

readers can track individuals as they move from point to point. The bodies of individuals become

overcoded through the informated tracks of the "indelible electronic trail" they produce as they move in

multiple ways through the streets, sidewalks, and subways of the city (Goldstein 2011).

Digital Registration

The systems of writing and archiving in disciplinary institutions have become the digital

extraction and databases of the control programs. Regimes of person-to-person visibility are increasingly

less important than the digital extraction, recording, and displays of information. Such a shift has meant a

substantial intensification of information collection and analysis capabilities. "[A]dvances in computing

technology mean that the powers of digital technological systems for processing, manipulating,

transmitting, and storing data are increasing extremely rapidly" (Graham 1998, 483). Such increases in

power and reductions in costs have supported a "new order of magnitude of automated data capture,

monitoring, and surveillance" (Graham 1998, 483). The development of digital technologies of

information collection, storage, and analysis has profoundly reshaped the operations of many key

institutions and systems: energy providers are leveraging advanced information and communications

technologies (such as smart meters) to spur a transition to smart grids that improve the analytical

capabilities, operational flexibilities, and overall efficiencies of utility networks; transportation networks

are shifting towards more efficient and safer Intelligent Transportation Systems (ITS) through the

deployment of a suite of digital registration technologies such as wireless networks, CCTV, and GPS

(Cameron 2006); and many hospitals and medical facilities are switching to electronic health records to

reduce paperwork, facilitate file sharing, improve data accuracy, and enhance analysis of disease trends or

outbreaks. The digitalization of the NYPD's record systems was designed to make possible increased

sharing, longer retention of information, and more sophisticated data analysis (IBM 2006). The

digitalization of the department's records aimed to boost its analytical power: its ability to draw upon

billions of records and perform advanced data analysis has improved the quality of its data, the precision

and robustness of its searches, and its ability to reveal non-obvious patterns in the data not observable by

humans employing written systems of registration at single locations.

Distributed Networks

In control programs, surveillance is distributed: information is collected at multiple locations by

various systems but these dispersed collection systems are ultimately interconnected into networks

managed by hubs that act as information exchanges and coordination centers (Galloway and Thacker

2007; Clarke 1988, 505). Automated software programs that collect information on populations at

multiple points and track the movements of individuals across multiple locations serve as the cybernetic

backbones of contemporary control programs. The spread of embedded systems of computing, and the

consequent suffusion of software through social space, makes possible a widespread dispersal of the

points of contact with systems of surveillance, a marked departure from the privileged single-sited gaze of

disciplinary spaces (Thrift and French 2002; Thrift 2004; Kitchin and Dodge 2005). While in their early

years computers contributed to a centralization of data and analysis, their widespread diffusion,

development, and diversification has contributed to the emergence of more dispersed yet networked

organizations of information and power (Clarke 1988, 500). There is no single primary actor whose gaze

provides the principal, direct sightline of power. Contemporary tracking systems do not depend on single

centers of registration and coordination, but rather take advantage of a host of new information and

communication technologies (such as new sensors, CCTV, GPS, the Internet, cell phones, and digital

databases) to develop networks of tracking mechanisms managed by hubs of power.

Some institutions and systems that have contributed to the emergence or indicate the increasing

importance of this new organizational architecture include the military, retailers, infrastructure providers,

and border patrol agencies. Some segments of military organizations have shifted towards networked

structures of ground troops coordinated by command centers that serve as "distanced data processing units" and "staff support for feedback and feedforward" (Boyer 2008, 63-64). Large retailers use digital, real-time databases to gather consumer information at multiple locations, tracking their (individual and collective) purchases and preferences, and integrating them as feedback into systems of sales, advertising, and logistics (Graham 1998, 488; Elmer 2004; Bonacich and Wilson 2008). The liberalization of infrastructure markets has pushed providers to improve the capabilities of their sensors, memory banks, and telecommunication systems to track the transactional patterns of individuals (Graham and Marvin 2001, 243). Lastly, the distributed networks and command centers of border surveillance and securitization utilize automated, algorithmic data-mining and predictive analytics to track the multi-modal movements of targets through circulation systems of finance, the Internet, airlines, and seaports (Graham 2010, 132-134).

The RTCC and LMSI also utilize dispersed but interconnected surveillance systems and high-tech command centers that serve as hubs of information collection and analysis. Digital data generated through individuals' interactions with the machines and software programs spread throughout New York City is central to the operations of both systems. Data daily generated by the police (911 calls, police reports, parking tickets, arrest warrants, DNA samples, investigation notes), the courts and correctional facilities (crime records and recidivist databases), public records, and the RTCC and LSMI themselves (CCTV feeds, radiation detectors, license plate readers) all feed both of these anti-crime systems with the big data that enhances the effectiveness of their data mining programs. In addition, during investigations, or as a product of previous investigations, the RTCC and LMSI are able to draw upon information from private databases or surveillance systems, such as cell phone records, credit card transactions, E-ZPass accounts, and private security cameras (Goldstein 2011; Feuer 2008). The upgrading of the information systems of the department also facilitated the integration of formerly siloed databases and positioned the analytics centers of both systems not as the pinnacles of surveillance pyramids, but as the coordination hubs of a distributed system of power. They manage information flows, coordinate exchanges, and make quickly accessible to officers and investigators the diverse types of information the department can collect.

Profiling

In control programs, predictive profiling has supplanted the normalizing judgment of the disciplines. According to Foucault, normalizing judgment achieved a "punishing universality" that normalized and homogenized subjects through repetitive, corrective exercises (Foucault 1979, 178). This "disciplinary penality" consisted of micro-penalties for the smallest infractions, judgments on and corrections of past behavior, the referencing of individuals to fields of comparison, the setting and enforcement of averages, and the quantification and hierarchizing of an individual's value (Foucault 1979, 177-184).

Profiling in contemporary systems of power does not represent a complete break with these logics. It too uses penalties (such as a denial of access, though most systems have shifted towards incentives), makes judgments on past behavior (such as previous purchases or committed crimes, but projections and forecasting have become more important); constructs comparative fields (relative valuations such as neighborhood comparisons remain critical but matching data sets and network analysis have become paramount), and quantifies and evaluates an individual's characteristics (statistics still matter, but they are increasingly integrated into mapping and simulation programs). For example, the RTCC and LMSI penalize by stopping, interrogating, arresting, or denying access to individuals who fit certain profiles within hot-spot crime areas or display suspicious behavior near sensitive locations. The criminal and public databases of both systems are also full of information on individuals' past behavior that is used to make judgments: both the RTCC and LMSI draw upon billions of files in department-wide records databases (crime reports, 911 calls), federal databases (as part of information sharing programs), and public records. The RTCC and LMSI also construct comparative fields of individual evaluation in order to conduct actuarial policing which depends on determining suspicious activity and risk levels.

But the shift towards predictive profiling indicates the emergence of new set of prominent processes of power. Increasingly, the collection and strategic organization of personal information is less

about the disciplinary methods of normalizing judgment, than it is the product of an incentivization of enrollment in profiling systems, the matching of dispersed data sets on the same individual, the tracing of networks of associations, the mapping of distinctive and projectable spatial patterns of individuals, and the simulations of all this information for the purposes of anticipatory control. Retailers (online and brick and mortar), Business Improvement Districts, credit reporting agencies, search engines, social media, the NSA, the military, and the RTCC and LMSI are all significant examples of various dimensions of this institutional spread and increased importance of contemporary profiling procedures.

Incentivization

Rather a predominantly punishing method of correction, control programs employ incentives, often targeted and customized, though sometimes more atmospheric and diffuse. While these systems are in some ways continuations of long-running practices, such as the exchanges of personal information for the provision of government services (Higgs 2004), the increased ubiquity, intensity, and automation of contemporary systems means a leap in magnitude for this incentive-surveillance logic. In many systems of consumption, micro-incentives have replaced the micro-penalties of the disciplines as the principal means of directing behavior: discounts, coupons, access, status, services, suggestions, convenience, tips, etc. are now offered to users of services, systems, or spaces in exchange for their continuing participation in programs of surveillance (Elmer 2004, 77). A variety of technologies and software programs are now designed to formalize the solicitation of personal information in many everyday economic routines. Personal information is solicited in exchange for small rewards. Examples include the suggestions lists of online book retailers like Amazon, the promotions and coupons provided by companies to consumers that use loyalty cards, and the mapping apps on mobile technologies that provide customized directions. But incentives can also be less specially targeted and be more of a diffuse, shared benefit, such as the sense of safety and protection provided by CCTV systems in spaces such as a Business Improvement Districts and public transportation systems.

The RTCC and LMSI are part of this spread of CCTV, justifying their extensive surveillance webs to the public through claims of providing decreased crime rates and more secure spaces for living, travel, and leisure. The RTCC's cameras, already over 7,000 spread widely over the five boroughs and continuing to increase in number, are meant to provide surveilled citizens with enhanced security (Paskin 2013). The CCTV systems, radiation detectors, and facial recognition programs of the LMSI, which collectively track and profile individuals moving through lower Manhattan, all play key roles in the NYPD's efforts to protect the infrastructure, buildings, streets, and people of lower Manhattan from terrorist attack. Varied and pervasive surveillance is exchanged for an incentive in the form of a sense of safety. In addition, and in particular during specific investigations, the RTCC and LMSI are capable of drawing upon the information solicited in many of the consumption practices noted above. Police frequently procure credit card records, ATM records, phone records, private CCTV footage, and computer forensic material as part of the expansion of the department's digital forensics, and much of this information can be deposited and kept in the databases of the RTCC and LMSI for ongoing and sometimes future investigations (Lueck 2007; Goldstein 2011). The RTCC and LMSI then, both profit from and employ a logic of incentivization that provides participants with rewards in return for a submission to mechanisms that track and profile their behavior.

Matching

In contrast to disciplinary methods, when the primary analytical method was to situate the information collected on individuals within fields of comparison with other individuals, the analysis of individuals within control programs depends more on matching the information packets of the same individual from multiple collection systems or databases (Clarke 1988, 500-502). Information on one individual is matched to data on the same individual held elsewhere. The individualized data that is relevant for the operation of a particular institution, system, or service is now often held in multiple locations and was collected for multiple purposes; so the most effective (large-scale, targeted, and detailed) big data mining depends on the expropriation and merger of these multiple databases. The credit

reports compiled on individuals by credit reporting agencies are clear illustrations of this process. Credit bureaus collect diverse types of information on individuals (basic facts, credit requests, types and size of debts, payment histories) from diverse sources (public and private databases, including credit cards, utilities, banks, mortgage companies, and car companies). This information is matched to specific individuals across data sets and a credit score is produced that determines access to loans (credit, houses, cars), interest rates, and even housing, employment, and insurance opportunities.

The RTCC and LMSI also depend upon such matching procedures to build effective profiles. Similarly to what has happened with patient records in medical institutions, the RTCC and LMSI have spurred a digitization of department records and a systematic upgrading of the departments' information infrastructure in order to facilitate data sharing. This sharing of files has also meant an increased premium on matching capabilities, as the accurate integration of these records improves the diagnostic and predictive profiling of individuals. Drawing on diverse public and private databases, the data mining programs of the RTCC and LMSI constantly match data on individuals to construct profiles of suspects. For example, when a crime is committed in a particular location, the RTCC is capable of compiling a list of profiles of previous offenders of the crime or individuals with criminal records living in the area. While many of the data matching and profiling systems in the early years of the RTCC and LMSI focused on individuals with prior records, these compilations of data into individual profiles is set to expand considerably among the wider population. One of the leading edges of this expansion is the operation of the Facial Recognition Unit within the RTCC. According to a police bulletin, this program assists

> various investigative units in identifying unknown people related to criminal investigations through the comparison of facial images. ... Video and still photographs of unknown perpetrators recovered from crime scenes will be analyzed by members assigned to this unit using specialized software to determine the subject's possible identity" (Baker 2011).

While continuing to draw upon traditional image databases compiled by law enforcement agencies, this unit is now also culling images from social media sites like Facebook in order to develop more effective matching capabilities for a much larger population (Weiss 2013).

Network Analysis

In addition to this matching procedure, contemporary profiling systems employ network analysis to profile individuals through the composition and evolution of their relations with others, objects, and locations. This orientation towards network analysis of individuals is boosted by widespread diffusion of networking mentalities and strategies among contemporary businesses, government agencies, and institutions. Organizations now frequently conceive of themselves in terms of networks, moving away from more modernist hierarchical formations towards (what is perceived as) more decentralized, flexible, and dynamic organizations; thus mimicking (often explicitly) the perceived decentralizing tendencies of new digital technologies. Also, many systems or organizations now analyze their problem spaces, users, subjects, or targets in terms of networks. Some of this network driven analysis is a product of how data mining within big data systems (upon which more and more of such institutions depend) is fundamentally networked and frequently derives its best values from making non-obvious, subtle connections among large, complex, and diverse data streams (Mayer-Schonberger and Cukier 2013). Networks of information are meant to reveal the networks of an individual's life. Network analysis has increased in prominence since those networks that individuals construct or participate have been increasingly considered as invaluable information for purposes of profit and power—the social relationships, residential histories, call patterns, travel itineraries, social media, and more general use of the Internet are all seen as by corporate and government trackers as critical identifiers and predictors of individual's characteristics and behavior.

Some of the innovators and clearest examples of this use of network analysis to construct profiles are developments in contemporary military thought, surveillance conducted by the NSA, and the leveraging of social networks by social media and internet search companies. Invocations of fourth generation warfare within military thought and strategy are often meant to suggest the need to appreciate how the new enemies of the US military are increasingly leveraging new communication and information networks as well as adopting networked organizational structures, for example, the far-flung social,

communication, and financial ties that link terrorist networks (Arquilla and Ronfeldt 2001). The revelations of the NSA surveillance programs also illustrate an exploitation of social networks for profiling purposes, as the links between individuals as revealed through call patterns and internet activity are compiled into profiles and used to determine the identities, connections, political proclivities, and risk levels of individuals (Greenwald 2013a; Greenwald 2013b). Lastly, social media applications like those developed by Google and Facebook explore the linkages between individuals, monitoring and exploiting the networks that emerge through such practices as friending, forming contact circles, comments, chats, and email chains. These networks provide Google and Facebook with valuable information for improved targeted advertising and product development (Kirkpatrick 2010; Levy 2011).

The networked databases of the RTCC and LMSI frequently conduct network analyses of suspects, carrying out data mining operations intended to reveal networks of connections between suspects and particular locations, other people, or incriminating evidence. New York Times columnist Alan Feuer describes a typical example of the product of such an analysis by the RTCC's data mining programs after it is presented on the screens of the RTCC's Data Wall:

> The methodology is link analysis and is startlingly visual: In the center of the screen, there is a photograph, perhaps of our Impala-driving robber. A line veers off to the address of his mother's house in Pittsburgh, another to his sister's in the Bronx. There may be more lines pointing to his business interests, his former live-in girlfriend, or perhaps, if one is lucky, to an image of the weapon that was brandished at the bank. (Feuer 2008)

A critical part of contemporary profiling consists of determining the particular networks that define an individual. The NYPD feed the data mining programs of the RTCC and LMSI with social network information gleaned from traffic stops, police investigations, and police interrogations, for example during stops conducted during the NYPD's Stop and Frisk policy (Baker 2010). Police departments, including the NYPD, have not only adopted military style analyses of terrorist organizations as networks, but also increasingly analyze individual gangs and their relations to other gangs as networked organizations. Police are also now analyzing the social media sites of gangs and gang members, hoping to identify friends and associates and any information capable of linking individuals or groups to particular crimes or crime patterns (Mathias 2011; Hays 2011).

Mapping and Simulations

In Foucault's disciplines, there was an emphasis on the temporal monitoring of individuals, for example analyzing workers doing factory tasks in a set sequence in a set amount of time. Taylorist time studies of factory workers are illustrative of this temporal breakdown and reconstruction of an individual's past and present actions. The profiling of individuals in today's control programs focuses much more intensely on the spatial patterning and simulated projections of individual behavior. Personal information is mapped and coded for the purposes of anticipating and controlling future events (Bogard 1996, 20). Recent and rapid advances in geo-locational technologies (e.g. remote sensing, GPS, and GIS) have spurred their use as tools of monitoring and management in a wide variety of institutions and systems (Graham 1998). Just as transitions to digital technologies, advanced software packages, and big data analytics have dramatically enhanced databases and data mining, so too has digitization substantially increased the utility and frequency of the use of mapping and simulation as pivotal tools in contemporary profiling. Such mapping and simulation builds upon the profiling processes of incentivizing, matching, and network analysis, yet also helps facilitate the forecasting of individual and collective spatial patterns (a critical dimension for contemporary assessments focused on questions of prediction, risk, access, and speed).

Mapping and simulation technologies have been critical to recent changes in contemporary policing, and the NYPD and its RTCC and LMSI in particular. Hotspot mapping has become a pervasive policing tool and the data mining programs of the RTCC and LMSI are especially advanced, providing police with up-to-date, data-rich, and granular predictions about emerging crime patterns across the city. The Data Wall's Prochart program integrates and maps the diverse data streams within the department, improving interconnections between the varied types of data the department collects and improving the speed of dissemination to field officers, as well as their comprehension of large amounts of data related to specific individuals and crimes. "If a robber, say, is caught on tape fleeing a bank job in a '75 Impala, his name can be acquired from license information, his address quickly found, a list of known associates

drawn up and a strike team sent to the proper location — prepped in advance with images obtained from Google Earth" (Feuer 2008). Simulations within the RTCC and LMSI are also diverse and significant: simulation programs are critical to the analytics software of the Facial Recognition Unit; simulation technologies help predict and map, in real-time, the movements of suspects through the city; and both centers participate in simulated training exercises on their own and with federal agencies in preparation for terrorist attacks. The mapping and simulating of information on individuals and networks (from common citizens using public spaces and systems, to gang members, repeated offenders, and terrorist networks) helps the department predict, disrupt, and respond to crimes by identifying emerging or possible threats and their probable locations.

This intersection between mapping, simulation, and profiling is also apparent in a number of other institutions and systems. One of area of substantial growth for intersections of mapping and simulation technologies has been GIS-based urban modeling. City planning departments have utilized suites of mapping and simulation software to spatially model urban development and design projects. Planners have used new geoprocessing and spatial visualization tools to improve plans, consider alternatives, and assess the social and environmental impacts of new housing developments, medical facilities, anti-crime measures, and transportation systems. While these assessments have often used profiling procedures oriented towards analysis and projections of neighborhoods and groups, geodemographic firms use similar techniques to profile consumers. Vast amounts of personal information is collected in interconnected networks of computers; personal profiles are cross-referenced and matched, cleaned, mapped, and simulated (repeatedly as new information is included) so that geodemographic firms, marketers, retailers, and others can identify, locate, and target specific customers with a focus on their future purchases (Elmer 2004, 74-75). Simulation systems that provide real-time profiling and forecasting are also spreading through a wide array of institutions and systems: militaries simulate and map the movements of targets, retailers simulate purchasing patterns to predict and plan stocking needs, banks and investment firms simulate markets and stocks, utilities simulate individual and collective consumption rates to target services and avoid breakdowns, and intelligent transportation systems

increasingly simulate traffic patterns and individual movements in order to manage flows and provide security (Graham 1998; Bogard 1996, 27).

Assessments

While disciplines were defined by the method of examinations, contemporary control programs conduct assessments, yet they retain some features of the examinations of the disciplines. The three key features of the examination according to Foucault were the new economies of visibility, the integration of individuals into apparatuses of writing, and the construction of 'cases' and 'codes' (Foucault 1979, 184-194). In a reversal of the economies of visibilities in monarchical regimes (which directed gazes towards those in power), the disciplines turned single privileged gazes towards populations of individuals. The normalizing gaze was woven into the functions of various institutions; the gaze was the privileged point of power (e.g. the Panopticon's watchtower, or the gaze of the schoolteacher) from which subjects were objectified, differentiated, and judged. The subjects were caught in systems of "compulsory visibility" and that held them in "a mechanism of objectification" that constantly extracted information from these subjects (Foucault 1979, 187). Subjects were integrated into "networks of writing" that consisted of an "intense registration" of individuals and a "documentary accumulation" that made possible the "organization of comparative fields" to classify, categorize, and normalize subjects (Foucault 1979, 189-190). These apparatuses of writing made each individual a 'case' with two correlated functions: on the one hand, the constitution of a individual as a unique object as well as a contributor to the measurement of populations and collective facts; on the other hand, the constitution of an individual as an object of power to be observed, classified, corrected, and normalized through the deployment of codes of analysis and conduct crafted from the documentary accumulation (Foucault 1979, 190-191).

Despite the shifts towards tracking and profiling, the assessments of the control programs still retain to various degrees elements of the examinations of the disciplines. The assessments still utilize visibilities as a key technique in objectifying its subjects as objects of knowledge and control. The thousands of CCTC cameras operating throughout the city and tied to the RTCC and the heavy

concentration of cameras in lower Manhattan—both private and public—that feed into the LMSI all capture individuals within a gaze of analysis. Police officers on the street collecting information and feeding it into each of these systems multiply these eyes of power. Subjects are also still integrated into systems of intense registration and documentary accumulation: in the RTCC and LMSI, databases filled with millions of files on individuals serve as the critical information infrastructure; data mining and algorithmic analysis of databases and CCTV feeds categorize individuals, judging them based upon coded criteria. Individuals are still analyzed as unique files and still included as part of a comparative field for analysis of other individuals and populations. For example, the risk assessments conducted by the RTCC and LMSI conduct data analytics meant to identify a particular individual's risk profile through large-scale comparative analysis. The databases of both systems, though both now digital, are full of a vast and growing accumulation of notes, records, files and reports.

Participatory

Whereas in disciplinary institutions, the presence of subjects was predominantly compulsory (as was their subsequent objectification within the surveillance regime of the institution), the assessments in contemporary control programs have higher frequencies of participatory objectifications, that is, people willingly choosing to enroll themselves within certain systems of monitoring and management. Partly this is due to many institutions and systems integrating advanced information collection systems as part of their normal operations, partly too it is a product of many new systems and services emerging that offer their users a 'cybernetic exchange': personal information production and collection in return for access, pleasure, convenience, and/or customization. Cybernetic forms of interactivity have spread quick among consumer technologies, and entertainment technologies such as television, movies, and game playing in particular (Andrejevic 2003; Andrejevic 2007). The diversification and increasing sophistication of entertainment technologies, especially their shift towards online and mobile formats, have contributed to the creation of a new kind of audience, player, or user *labor*. Consumers' choices and schedules of television watching, player networks in video games, and time-space paths through public spaces or sites

of consumption all become information generators for entertainment firms, marketers, and retailers. Such forms of interactivity are simultaneously forms of empowerment and pleasure as well as submission to surveillance. Another exemplary case of these cybernetic exchanges is search engines such as Google, which digitally track individuals web use, accumulate logs on the internet use of individuals and populations, construct profiles on individuals and transform the operation of their search engines and advertisements based on the voluminous information and feedback they collect (Levy 2011). Some changes within workplaces follow similar logics. The introduction of information technologies to conduct surveillance and analysis on workers has been coupled with worker-supported efforts to improve work conditions, enhance morale among workers, emphasize self-management, let workers participate in planning and management, and decentralize the structure of power (Zuboff 1988, 413). In the RTCC and LMSI there are still degrees of compulsory assessments, depending on the spaces entered; but there are much higher levels of participatory assessment than in the disciplines, as subjects will often choose to exchange surveillance and assessment for access to the locations (e.g., Ground Zero) and systems (e.g., the subway), improved speed (Fast-Trak monitored toll lanes), reduced risk (Business Improvement Districts and corporate offices constructing private surveillance systems and voters backing politician-driven plans).

Automated

The assessments, rather than being the product of human monitors filling out paper reports, are primarily the products of automated programs installed as computationally active elements of the environment (Thrift and French 2002; Thrift 2004). Automated systems take advantage of recent advances in computational technologies and capabilities, overcoming the physical, financial, and operational limitations of human monitoring through the improved systems of collection, transmission, storage, retrieval, and analyzing (Norris and Armstrong 1998). These automated systems are capable of analyzing far larger amounts of information than those of 'networks of writing' within disciplinary

institution; they are able to conduct faster (real-time) and constant (24-7) analysis; and the sophistication of their analysis far exceeds human capabilities.

Many industries and particular institutions have contributed to the development and spread of automated assessment technologies and practices. The CCTV industry has been particularly aggressive and adept at marketing and deploying advanced visual surveillance systems. Innovations in fiber-optic transmission, camera and lens capabilities, and digital processing have increased CCTV's utility and attractiveness for markets such as crime control, traffic management, and workplace security (Graham 1998; Norris and Armstrong 1998; Norris and Armstrong 1999). Automated assessments have been spreading in workplaces since the 1980s. The diffusion of new information, communication, and surveillance technologies spurred a managerial prioritization of informated production—computer-based imposition of information through programmed instructions, and automatic monitoring of worker performances (in the form of digital feedback to management) (Zuboff 1988). Another key example of the spread of automated surveillance is the growing number of cities implementing intelligent transportation systems (Cameron 2006). These new programs use GPS, CCTV, and smart card systems to accumulate passenger and system data in real-time for the purposes of improving operating efficiency, safety, and reliability, but at the cost of expanding and diversifying forms of surveillance and the fracturing of social service provision. Lastly, the military has been another key developer of automated assessments. In an effort to combat the insurgency during the Iraq War, the US military deployed new innovations in CCTV systems and integrated them with advanced computer analytics to conduct real-time, 24-hour tracking, profiling, and assessing of populations within particular neighborhoods of Baghdad (Graham 2010, 114-116).

Automated assessments are key features of the RTCC and LMSI. The IT infrastructure constructed in collaboration with IBM has exponentially increased the analytical capabilities of the department. Sophisticated data mining programs run continuously, drawing connections among the department's stored data and integrating incoming information on individuals, crime patterns, and police resources. New automated assessment programs have transformed and enhanced the department's day-to-

day operations and capabilities. The RTCC and LMSI can be considered informated workplaces: the spread of information and communication technologies—many of them mobile—have also enhanced the informational organization and feedback of normal police work. Developments in CCTV technology also indicate a growing role for automated assessments in the RTCC and LMSI. CCTV cameras have continued to proliferate (upwards of 7,000 police CCTV cameras are now distributed throughout the five boroughs) and to develop more advanced operational and analytical capabilities (with improved zoom, rotation, and detection features). In addition to this pervasive diffusion of CCTV, the automation of assessments in the RTCC and LMSI has been amplified through the expansion of the number and locations of its license plate readers. Out of a total of 238 such readers, 130 of them are now mobile. "They are mounted on the back of police cars assigned to patrol duties across the city's five boroughs and to specialized units like the highway and counterterrorism divisions. The remaining 108 cameras are set up at fixed posts at city bridges and tunnels and above thoroughfares" (Baker 2011b). The LMSI also includes radiation detection systems that conduct automated assessments of vehicles coming into Lower Manhattan. Originally intended solely for counterterrorism, their databases and analysis of vehicular images, positions, and movement has proven critical in a growing range of investigations.

Correlation

A central feature of the assessments of control programs is the use of statistical pattern recognition. Rapid growth of statistical pattern recognition since the 1980s has been driven by advances in computational power (faster processors, larger data sets, cheaper storage, heuristic algorithms) and newly emerging applications such as data mining, bioinformatics, biometrics, internet searching, remote sensing, and industrial automation (Jain et al. 2000, 5, 31). In particular, with the increasing importance of big data, automatic pattern recognition systems have helped decrease quests for the identification of specific and certain causes in favor of automatic pattern recognition systems that can collect, process, and represent reliable and informative correlations (Mayer-Schonberger and Cukier, 2013). Data analytics are

now designed to discover non-obvious and meaningful patterns and relationships in the data. Instead of a search for causes, these big data analytic programs focus on finding correlations within the data— identifying tendencies, mutual variations, and parallel patternings that improve the credibility of the data and the predictions of the system. Such pattern recognition informs a diverse array of classification, search, identification, and forecasting practices within contemporary institutions and systems.

Geodemographic firms and retailers (both online and brick and mortar) have been among the leaders of developing advanced statistical systems for the analysis of individual behavior. Companies such as Walmart have leveraged their databases of individual purchases to monitor sales and inventory, organize their just-in-time production and distribution systems, anticipate changes in buying patterns, and customize marketing campaigns (Bonacich and Wilson 2008; Lichtenstein 2009). Web search engines data mine their immense databases in search of unknown patterns and statistical regularities that can help them better profile their users and target recommendations (Levy 2011). Search companies such as Google have also used correlation analysis to improve their development of biometric systems, optical recognition systems, and speech recognition programs. Credit reporting agencies also use correlation analysis to explore the possible relations between a large range of variables in order to predict future payments, debts, and health of individuals. And health institutions use correlation pattern recognition to analyze the spatial patterns of outbreaks and epidemics as well as construct genetic profiles that illustrate individual predispositions for certain diseases, probable responses to medicines, and risk levels for operations (Siegel 2013).

Similar types of correlation analysis are also used within the RTCC and LMSI. The RTCC and LMSI utilize correlation analysis to identify connections between particular crimes as well as identify crime patterns and their probable evolution. The RTCC in particular has been instrumental in integrating the department's databases into a single system and analyzing these data for cross-precinct or city-wide patterns of crime that were previously difficult or even impossible to discern (Baker 2006). Correlations have also been critical to developing real-time hot-spot maps of crime patterns that have enabled the

NYPD (as well as other police departments) to anticipate the emerging spatial trends of crime and position officers accordingly. The big data analytics of the RTCC and LMSI have also been used to identify relations between crime trends and possible suspects by correlating crime patterns with the data profiles of known criminals, their residential histories, and information from social networks. Correlation has also been critical to the department's development of facial recognition systems and its expanding development of other biometric identification systems.

Risk, Access, and Mobilities

Within control programs some of the most prominent criteria and purposes of assessments are risk, access, and speed. A variety of kinds of control are now less about regularized exercises, production, and normalization as in the disciplines and more oriented towards determining individual's level of risk and deciding the kinds and intensities of an individual's movement and speed (Wood and Graham 2006). The monitoring of mobilities and the protection of systems of circulation has become increasingly important. Automated software sorting systems differentiate populations into distinct kinetic classes that experience inhibitive friction or prioritized enhancements of access to and speed through particular territories (Wood and Graham 2006). The risk level of individuals plays a critical role in this differentiation: systems of power categorize individuals based on risk levels in order to predict their actions, prevent their presence in certain locations, or reward or refuse them services. From policing, to transportation systems, to border patrols, to infrastructure protection, to credit reports, the collection and analysis of information for the purposes of determining individual and locational risk levels as well as to monitor and differentiate mobilities, has become a defining feature of contemporary control programs.

Police departments have been at the forefront of implementing risk reduction and risk avoidance strategies as tools of control. Actuarial policing methods have used sophisticated information technologies, statistical analysis, and modeling programs to determine risk levels of particular individuals (particularly among recidivist populations) and specific areas; police reduce or pre-empt crime in these hot-spot areas by modifying the environments in ways that increase the difficulties for criminals and

reduce their rewards (Garland 2001, 171; Clarke 1995; Seigel 2013, 60-63). Meanwhile prisons have increasingly dispensed with programs of rehabilitation and reform and shifted towards a function of removal, confinement, and warehousing of a subclass of risky and dangerous individuals (Graham 2010, 95; Garland 2001). Critical infrastructure protection is another key source of developments within systems of control oriented towards questions of risk and circulations (Lakoff 2006; Cavelty and Kristensen 2008; Collier and Lakoff 2008). These systems have deployed military techniques, public-private partnerships, and advanced logistical software programs to assess vulnerabilities and risk levels to infrastructural systems. The intention of these programs is to anticipate and pre-empt threats in order to protect multiple interconnected systems, including telecommunications, transportation, government services, utilities, and emergency response. Another example of differentiated mobilities and risk assessment programs is how border patrols have become international systems which monitor, select, prevent, and filter flows of people through biometric systems and automated risk profiling at borders and passage-points. These systems differentiate the mobilities of individual bodies based on risk and wealth: stopping and immobilizing some, letting others pass, enforcing different speeds, and separating individuals into distinct 'kinetic classes' (Graham 2010, 137). Some scholars have referred to this as a "dromological divide," defined as a growing divergence of the experience of movement due to changes in airport surveillance, fast border bypass schemes, toll roads, and various segmentations of utility provision (e.g. difference in internet speeds). These systems have contributed to growing inequalities in movement, access, and speed (Adey 2004; Cameron 2006; Greico and Urry 2011). And lastly, credit scores have also become critical indicators for an individual's level of risk. The scoring systems of the credit bureaus compile information from consumer credit history, loan applications, and consumer databases in order to assess individuals for the likelihood that they will make future payments or default, with often considerable consequences for an individual's residence, school, car, and even job prospects.

The RTCC and LSMI also include a logic of risk analysis and circulation assessments. While the most expansive form of monitored mobilities was voted down by New York City voters (a congestion charging system that would have been linked with the NYPD surveillance program like the Ring of Steel

in London), the RTCC and LMSI still operate an extensive system of risk analysis and mobility monitoring. These systems are involved in the monitoring of several different systems (utility infrastructure, roads, subways, trains) in an effort to prevent crime and attacks. Not only are the data mining programs constantly collecting and analyzing data on individuals to predict possible crimes or suggest suspects for particular cases, but the dense network of CCTV cameras, license plate readers, radiological detectors, and high-tech equipped police vehicles act as a wide net and thin mesh of mobility monitoring (Cohen 1985). The RTCC and LMSI include distributed but interlinked interfaces and databases that provide the collection points and analytical techniques for various forms of risk assessment: facial recognition systems alert authorities to suspicious or wanted persons; radiological detection systems analyze all traffic flows into Lower Manhattan for radiation levels; license plate readers capture images of license plates and alert authorities to the presence of flagged vehicles and store information for future cases; algorithmic visual surveillance software identifies and alerts police to abnormal or suspicious driving patterns. The operation of the LMSI has included the shifting of traffic flows in lower Manhattan and the planning and practicing of emergency response measures that include swift street shutdowns in the case of an attack or accident.

Conclusion

The spread of the crime center models developed by the RTCC and LMSI to other metropolitan areas around the country is evidence not only that these centers will increasingly serve as part of the core of urban policing nation-wide but also that the RTCC and LMSI are symptomatic of the technological and tactical transformations of police forces generally. Contributing to the significance of these systems, both for scholars seeking to understand changing policing practices as well as scholars analyzing more general transformations in logics of power, is the fact that the technologies, techniques, and tactics of the RTCC and LMSI parallel the changes in a diverse set of other institutions that play a critical role in organizing contemporary life.

The 'technologies of power' identified by Foucault have shifted. As Deleuze notes, at the core of these transitions away from disciplinary logics has been the correlated transition from thermodynamic

machines of the disciplinary age to the cybernetic machines of contemporary controls (Deleuze 1992). Foucault's 'machinery of power' has evolved. A wide variety of institutions—including medical, marketing, militaries, transportation, logistics, workplaces, policing, and others—have integrated new information and communication technologies, and thereby updated and expanded their technological infrastructures. These new technologies increasingly serve as the operating core of these institutions, playing key roles in the transformation of their operations, their new organizational patterns, and their new techniques of control.

This technological upgrading has been the key contributor to the emergence of a newly pervasive ensemble of techniques of power. Following a transition away from disciplinary forms of power, the RTCC and LMSI, as well as a host of other institutions and systems, are now characterized by new technologies of power that I have here called 'control programs.' Though these programs have been adopted by different institutions and systems in different locations at different times, and included diverse packages of the ensembles of control programs, significant levels of consistencies, commonalities, inter-functionalities, and family resemblances between the operations of these logics in these geographically dispersed and operationally varied projects speaks to the emerging consolidation of a new regime of power. While the hierarchical observations, normalizing judgments, and examinations of disciplinary power still linger in many of these institutions (as some of their elements have persisted, undergone only slight changes, or been refunctionalized), the collective impact of institutional integrations of advanced technologies have been the emergence and spread of the tracking, profiling, and assessments of control programs.

Book Review: *Foucault Beyond Foucault: Power and Its Intensifications Since 1984*,

by Jeffrey T. Nealon, Stanford University Press, 2008

Perhaps Foucault should not have been as self-effacing as he was when he stated that the 21st century would be a "Deleuzian century." We may have as much, if not more, justification for the returning to the work of Foucault, as we find ourselves in the midst of pervasive and profound transformations in contemporary systems of power. With the rise of cybernetic technologies, the diversification and diffusion of new forms of media, transformations in the structures and techniques of capitalism, innovations in government, and dramatic upheavals in cultural practices, we are living in an era that not only challenges us to develop new concepts and methods of analysis, but to also begin such creative and critical responses by questioning the intellectual foundations and frames that we take for granted. And Foucault, more than any other theorist of the last fifty years, is at the core of our thoughts on power. A move forward could benefit from an initial, provocative turn back. In his book *Foucault Beyond Foucault: Power and Its Intensifications since 1984*, Jeffrey Nealon aims to provide a "counterreading" of Foucault that challenges the "Foucault Consensus" that he argues has emerged within the academy in the decades since Foucault's death in 1984.

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There appear to be, for Nealon, three main problems with this consensus. First, it subscribes to a neo-Hegelian narrative of Foucault's intellectual arc, one defined by the formulation of a position (e.g. structuralism), recognition of its limits or failures (e.g. inability to account for power), a disavowal of the project, and a subsequent new project with clear improvements on the previous one (e.g. a shift from archaeologies of knowledge to genealogical accounts of power). This perspective on Foucault's work overlooks the continuities between the different phases of his research and supports a simultaneous indifference towards his earlier work and an overevaluation of his later work. Second, this consensus dismisses Foucault's work on power as a politically deflating account of a totalized regime that leaves no

room for agency or resistance. And third, the consensus characterizes Foucault's late work as a sharp break with his previous work on power and as an affirmative reassessment of the Enlightenment project as well as liberal humanism. Both of these last two points concern errors of misreading and failures to appreciate, or replace, the constitutive interrelations between power and subjectivity outlined by Foucault. Each of these positions shows serious deficiencies in contemporary readings of Foucault and they each hinder creative applications of his work to contemporary conditions.

For Nealon, there are good conceptual and contextual reasons not to be done with Foucault or allow the dominant consensus on his work to have the last word. "Foucault beyond Foucault" means Foucault intensified and extended, his work read differently and made more effective for the contemporary period. Just as Foucault's own work went through not a series of teleological improvements but a series of intensifications, so too have systems of power, since the age of the sovereign regime to the contemporary systems of multinational capitalism and societies of control. Foucault's complex account of power—when appreciated as such—can help sharpen the analytical tools we need to conceptualize and critique the substantial "mutations and intensifications of power" in contemporary capitalism. To re-enliven Foucault's work for the present and adequately respond to the "Foucauldian provocation" we must return to his work, shed the dead-end consensus that has emerged around his corpus, and rethink his thoughts on power, ethics, and resistance from the perspective of increased *intensities*.

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Intensity is unquestionably the key concept for Nealon; it is mentioned on almost every page and mobilized for diverse ends: a rereading of Foucault on power and the evolution of systems of power, as a description of Foucault's own work, and as a characterization of the distinctive feature of contemporary conditions of power and control. Intensity carries considerable analytical weight in this work. For Nealon, the key to understanding the historical shifts in power analyzed by Foucault is the notion of intensity (or intensification). Rather than a teleological, deterministic, and predictable sequence of historical stages of development, the evolution of dominant systems of power (from sovereign to social to discipline to biopower) is explained by an increasing intensification of power. Nealon argues that Foucault's concept

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of intensification indicates an increasing saturation of the social field, an extension and improved efficiency of power. More intense means more ubiquitous and more effective—a spreading and fine-tuning of power's mechanisms. And while process is slow in its spread, and unpredictable in its outcomes, it is period-defining in its consequences. For example, Foucault's account of the shift from sovereign to disciplinary regimes is meant to indicate an emergence, extension, and mutation of power away from centripetal intensities toward centrifugal intensities, that is, a spread and improvement of power's effectiveness through a movement away from bodies towards relations and capacities as well as away from concentrations in kings and courts towards a dispersal into institutions and everyday life. An intensification is both the transformative threshold and defining difference between these regimes; and the difference between modern disciplinary power and postmodern forms of control as well.

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Nealon defends Foucault's genealogical work against contemporary critics that reject it as a totalizing and defeatist failure (since it ostensibly leaves no room for any agency or resistance); Nealon also refuses to endorse another contemporary line of thought on Foucault that sees his late work on ethics in Greek and Roman antiquity as a belated but welcome reversal on the virtues of the Enlightenment project. Instead, Nealon calls for a reconsideration of Foucault's middle and late period in order to develop a productive engagement between Foucault and post-Marxist political economics as well as the work of Deleuze. In particular Nealon suggests that Marxist theoretician Frederic Jameson's adoption from Ernst Mandel of a periodization of epochs of capitalism (market, then monopoly, and now finance-dominated multinational capitalism) can be profitably mapped onto the work of Gilles Deleuze, who suggested that Foucault's disciplinary societies have slowly declined since World War II and been steadily replaced by an emergent 'society of control'. Societies of control, then, are the methods of power within societies of multinational capitalism. For Nealon, this evolution does not rebut the work of Foucault, but indicates its continuing relevance: transformations into multinational capitalism and control societies are simply the latest 'intensification' of power outlined by Foucault in *Discipline and Punish* and *History of Sexuality Vol. I.* The relations of power analyzed by Foucault have not disappeared, but

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rather spread, diversified, and increased its capacities to control and decreased its limits, inefficiencies, and costs. According to Nealon, the colonization of nature and the unconscious by global financial capitalism, and the emergence of universal transmutations of power into more flexible forms of control, are indications of the triumph of what Foucault called 'biopower' and 'governmentality'—they are more pervasive, more efficient, and more *intense* forms of power than the regimes and techniques that preceded them. Governmental biopower is when all life becomes integrated into the networks of power. While the disciplinary methods of manipulating individual bodies have not disappeared, but rather been 'redeployed', the reign of governmental biopower indicates that every aspect of natural processes and the life of human populations has been integrated into intensified systems of control.

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Also on Nealon's agenda for this work is a re-examining and updating of Foucault's work on resistance. Nealon seeks, again, to counter what he considers is consensus on the work of Foucault that holds that his work leaves little or no room for agency and resistance, that individuals caught within relations of power are doomed to be controlled and dominated. Foucault helps us move beyond humanist accounts that pit resistance against power, or consider a life of resistance the only authentic life, or consider liberation from power as the end sought by resistance. For Nealon, no Subject of resistance exists; no authentic agency free from relations of power is possible. All agency is constructed and all agency is structured by power relations.

Nealon argues instead that resistance is not too difficult to find in Foucault's text, indeed, it is ubiquitous if you know where and how to look. Resistance takes place differently in Foucault. But recognizing this difference requires seeing resistance as fundamentally intertwined with relations of power; resistance is inseparable from power. Resistance in Foucault is not an external force, or binary clash, or secret principle, or transcendental ideal. For Nealon, one of the fundamental lessons of Foucault is that it is impossible to be opposed to power tout court; relations of power are inevitable, what is decisive is a deployment otherwise, a new and better set of definitions and decisions stemming from the production of power, wealth, and truth. The critical question is not locating resistance—indeed it is

everywhere—but mobilizing, focusing, and intensifying resistance by utilizing subjugated knowledges, that is, the disqualified knowledges from below to find "channels, concepts, or practices that can link up and thereby intensify transversal struggles into larger, collective but discontinuous movements" (106). Struggles and movements of resistance do not eliminate power, but transform it, reworking it into a set of different and better relations.

Foucault's other significant contribution, argues Nealon, is the interconnections he explored between resistance and ethical agency in his late work. Nealon claims that ethics in Foucault is the "building and deploying of an exit," an encounter with power followed by an intense "singular response, a flight, a twist, an outburst, a refusal"—a Deleuzian 'line of flight' (79). A practice of ethics and resistance is even more apparent and important in contemporary conditions of late capitalism-globalization-biopower, in which an intensified set of power relations has infiltrated and restructured all aspects of life. Since power has become intensified, saturating the social field to an unprecedented depth and detail, so have practices of resistance. Rather than representing ethics and resistance as rare practices, reserved for a privileged few, and consisting of transgressive acts against punitive norms, Nealon claims that ethics and resistance are ubiquitously common, available everywhere and to everyone.

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While Nealon's ambition is provocative and the design of his project could well serve as a model for contemporary reassessments of Foucault, the actual execution of his argument suffers from a series of significant and often frustrating flaws. Nealon frequently reveals himself to be a questionable reader of Foucault, at times marshalling textual support for his intensification thesis that strains credibility or seems beside the central point in contention. For example: in his insistence that Foucault's engagement with Kant, even in Foucault's late work, is driven by a defense of a philosophy of the concept and a critique of the philosophy of the subject, he cites a 1978 essay and a section from Foucault's *Archaeology of Knowledge*—neither of which really represents Foucault's evolutions in his later period, usually considered as his work in the early 1980s before his death. Or when Nealon (otherwise usefully) emphasizes the need to remember the role of social-juridical-representational power as a mid-point

transition from sovereign to discipline dominant societies, he distinguishes and substantializes this form of power too strongly—it never served as a separate period or dominant ethos of power, but rather, served a critical function as a source of critique and breakdown of the sovereign regime and a discursive covering function for the disciplines upon which it depended for both its discursive formulation and institutional effects. He also, in a move frequent within the Foucault literature, fails to distinguish clearly and consistently between disciplines and biopower. Biopower, as it was developed by Foucault, includes the disciplines (along with biopolitical management of populations as the second 'pole'), yet Nealon and others have consistently separated these two as distinct regimes. Lastly, and perhaps most problematically among Nealon's misreadings, is the conceptual muddle that is 'intensity' in his work. His analysis includes wild swings in the meaning of intensity: from extension, to change, to scale shifts, to something to be produced, measured, and evaluated, to an "attribute of mobile forces," to "speeding up and slowing down". There is very little textual evidence drawn from Foucault to support these extensions and diversifications of the term. The sheer proliferation of the meanings of intensity end up diluting it of real substance and force.

A second major shortcoming is the vague intersections he explores between the work of Foucault, Jameson, and Deleuze. Mostly these sections consist of summaries of each of their arguments and when connections are crafted they are of a superficial and spurious variety: control societies are 'intensifications' of disciplinary societies; multinational capitalism is an 'intensification' of capitalism and consumption. His work proceeds more through juxtaposition and assertion rather than a rich interweaving. This practice unfortunately avoids the very important yet difficult questions about Foucault's relation to political economics, in particular his very interesting convergences and divergences from Marx on questions of power, class, struggle, subjectivity, resistance, and revolution. Bridging these divides by ignoring them, or simplifying the differences by schematizing their positions, or repeating various formulations of "intensity" or "intensification" as the primary contribution of Foucault to these debates, does not advance the argument very far and perhaps produces more doubts than answers about a creative, coherent, and consistent synthesis of these authors.

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Other shortcomings are also apparent. Nealon mentions but never develops the intriguing parallels and interrelationships—both conceptually and historically—between Foucault and complexity theory. Nealon's comments here are suggestive, but need more rigor and depth. Also disappointing is the lack of sensitivity to the role of spatiality within the work of Foucault. Even when quoting Foucault's often quoted phrase "of minor processes, of different origin and scattered location," Nealon seems uninterested in the geographical dimensions of the emergence and operations of the systems of power analyzed by Foucault. In addition, his argument about intensifications of power relations repeatedly refers to a vague notion of 'extension' but leaves the spatial dimensions of this term rather vague, and fails to explore how such extensions may be related to the (changing) relations between different locations and institutions, as well as the emergence of new macro-spatial meta-powers. Exploring intersections between new digital technologies, intensifications of power, and new spatial arrangements would have been a welcome addition to this study. And lastly, Nealon's work relies too heavily on an undeveloped notion of 'unpredictability' rather than spelling out in more detail the various and evolving forms of dysfunction, disruption, incompetence, and resistance that troubled systems of power and force them to evolve while threatening them with collapse.

*   *   *

To Nealon's great credit, he positions his project at an enormously interesting and perhaps deeply important intersection. Systems of power have been so dramatically reshaped over the last several decades by the introduction of new kinds of technologies, new forms of capitalism, and new rationalities of government that theorists and researchers should feel compelled to reconsider their own basic assumptions and overarching frameworks for thinking about 'power' and 'resistance'. The legacy of Foucault, probably the most influential theorist on power, must be central to this rethinking. But the legacy is one that is alive and evolving: returns to the work of Foucault should be animated by a spirit of creative engagement, of taking what is needed for improved analyses of power today. Scholarly explorations of what Foucault 'really meant', or the subtle differences and continuities between specific texts (and interviews and lectures), should be considered important but secondary, supplementary work to

engaging with Foucault in ways that sharpen our own understanding of how power operates, how it has

evolved, what still works in Foucault and what doesn't, what supplements need to be made, what creative

rereadings remain possible and even necessary. In discussing the concept of resistance in Foucault,

Nealon makes a critically important point: one of the most instructive examples of resistance in Foucault,

is the work of Foucault himself. His oeuvre is an *enactment* of resistance. While Nealon's own work is

limited by its numerous shortcomings, the flawed execution is not reflective of the value of the project.

The need for something like what Nealon tried to achieve still remains.

Conclusion: With and Beyond Foucault

This dissertation is a continuation of a long-running engagement with the work of Foucault, as well as an attempt to clarify a distinctive approach or interest in his work. Refusing to 'forget Foucault' and wishing to avoid the 'Foucault consensus', I have examined aspects of Foucault's work that I find compelling, underappreciated within the secondary literature on Foucault, and useful for analyses of contemporary systems of power. It is not that what is normally taken as the basics of Foucault is not useful or interesting to me; indeed, such basics are why I first gravitated to his work and they still serve as a core focus of my interest in and appropriation of Foucault: his identification of epochal regimes of power, his focus on a diverse but interconnected set of institutions, his detailing of the specifics of particular techniques, his sense of history as a combination of transformation and periodic consolidation, his concentration on the body as privileged target and source of resistance for power, and his emphasis on resistance generally as a more-than-just reactive ubiquitous force of disturbance. Each of these points can be found frequently in literature on Foucault, and they have served as major influences on my own work.

Yet increasingly during my time in graduate school and further readings of Foucault, I have felt that there are dimensions and moments in Foucault's work too often overlooked. There are aspects of his analysis that could be profitably reread and emphasized to not only enrich our understanding of Foucault, but also to deepen, diversify, and transform many of the key lessons that have been repeated as his major legacy. We can supplement his ideas with underappreciated aspects of his work. And we can make additions from high-quality contemporary scholarship that can be usefully integrated into a Foucauldian framework. Each of the chapters of this dissertation pursues a part of this project to clarify and share a rereading of Foucault that returns to his work differently than other readings, and produces useful yet new returns on that reading as a result.

My Foucault is the genealogical Foucault, whose influence has probably been the greatest of any of his periods yet has waned in recent years with the increased focus on his lectures and late essays on

ethics. My Foucault is the technological Foucault, whose possible contributions to studies of technology as well as the impact of technology on his own understanding of history and power, has been considerably underappreciated. My Foucault is also focused not just on resistance, but on the diversity of ways in which systems of power are disrupted or suffer from dysfunction. Foucault is one of our great thinkers of forces of agitation. My Foucault is updated: in the spirit of his own efforts to constantly evolve his positions, Foucault's framework should not simply be treated as a static set of tools to be picked up when needed and applied in a mechanical manner. Updating Foucault means rereading his work creatively, discovering new aspects and new uses, reading him against other scholars and using that intellectual friction to highlight new possibilities and supplements for his work, and it means developing Foucault's thought in directions that make it more adequate for an examination of present systems of power, which display such dramatically different dynamics than those forms of power he identified as the disciplines. This dissertation has collected together several features of my Foucault.

Chapter One's "Lexicon of Underappreciated Concepts in Foucault" is a product of the effort to return to and reread Foucault differently. I have read Foucault repeatedly throughout my undergraduate and graduate schools years, and have read *Discipline and Punish* in particular many times. At some point the reading of the secondary literature on Foucault became frustrating, in part because of the repetition of the same arguments, the lack of a spirit of exploration and curiosity towards Foucault's work, and the absence of an engagement with interesting material I knew was in *Discipline and Punish*. The lexicon is also written in the spirit of the dictionaries and key concept collections that have come out in recent years on a number of philosophers and research topics. In particular I was influenced by the specific entries in some of these collections on philosophers that, rather than presenting the basic and familiar points of a core concept, make you think differently about a philosopher or see their work in a new light, with new points of engagement with or departure from their work. A certain kind of collection has also been of particular interest to me: the collections that are compiled with the explicit purpose of serving as a platform for future studies. These are frequently found in young or emerging discussions, for example collections associated with cybernetics, digital technologies, and new media studies.

To make this lexicon I copied out the majority of the central three chapters of *Discipline and Punish* as well as other key sections of that work, *History of Sexuality Vol. I*, and the interviews and essays collected in *Power-Knowledge*. I did searches for each of the terms, compiled their uses, crafted a general definition from all the uses, and then outlined the key aspects and different dimensions of the term's use in Foucault's genealogical work. The terms can be roughly broken up into three types: foundational terms that identify basic or ubiquitous conditions or dynamics (forces, multiplicity, agitation), terms that describe operations of power (ensemble, invest, distributions, series, extract, correlations, and experiment), and terms that mark Foucault's interest in meso- and multi-scale organizations of power (combinatory compositions, networks, and continuum).

The lexicon reveals new aspects of Foucault, highlighting concepts and foci within Foucault's work that are normally overlooked. Each term on its own and the interconnections between them add to our reading of Foucault. For example, the foundational terms help reveal the presence of a minimal materialism in Foucault; the terms about power's operations allow us to better understand the complexity, specificity, and dynamism of power and its techniques; and the terms on meso- and multi-scale formations of power uncover aspects of Foucault's *Discipline and Punish* that are usually only identified as part of the larger scale foci within the biopolitical and governmentality frameworks he later develops. Some of the contemporary relevance of this lexicon is that it opens ways of reading Foucault's *Discipline and Punish* as not merely a description of disciplinary forms of power, but a more general set of operations that may continue today in new forms of digital technologies and cybernetic controls.

I had three main motivations in the writing of Chapter Two, "Foucault, Technologies of Power, and Machines." First, the central role of new technologies in contemporary systems and institutions means the question of technology becomes central to anyone interested in specific or general examinations of contemporary forms of power. Second, very little has been written on Foucault and technology. While there is an immense amount of sometimes high-quality work that applies Foucault's ideas to studies of technology, very little work explores Foucault's own thoughts on technology and even less that analyzes the role of technology in his formulations of key positions during his genealogical

period. Third, I wrote this chapter because when reading Foucault again with issues of technology in mind, it was striking how central the term 'technology' and a host of other associated terms (technical, technique, instrument, procedure, mechanism) were within *Discipline and Punish*. It quickly became clear that 'technologies of power' was more than a metaphor and indeed central to understanding Foucault's work on power.

My construction method in this chapter was similar to the lexicon: gathering together Foucault's uses of the technology-related terms and identifying their definitions, dimensions, and role within his analysis. I wanted to identify how he thought about technology and why he turned to technology as a model and description for how modern forms of power operated. In this chapter, I argue that power as a technology allows Foucault a useful means to differentiate his work from other prominent scholars and schools. Yet when I focused on technology in Foucault, it also revealed an influence of Marx on his work, which is frequently overlooked, especially Marx's labor discipline tied to machines in factories. 'Technologies of power' allowed Foucault to draw out specifics of how power operated, revealed some interesting aspects of the interconnection of power and knowledge (its intense and strategic intertwinement transforms power into a technology), and helps Foucault ground his rethinking of power in the emergence and impacts of new artifacts within particular institutions. Focusing on 'technologies of power' instead of the more narrow formulation of 'productive power' (that is most often cited as Foucault's contribution to studies of power), reveals important features beyond just productivity that Foucault thought were distinctive about modern power.

Seeing how much emphasis Foucault put on questions of technology, and his original formulations of its evolution and relations to power, raises the possibility that a framework and methodology for studies of technology (for example a competing paradigm to ANT, which cites him as an important influence) could be derived from the work of Foucault. Also, in relation to contemporary studies of power, recovering and emphasizing the 'technologies of power' in Foucault means there might be more numerous and different types of continuities between present dynamics and how Foucault

formulates power in *Discipline and Punish*, even while there might still be significant breaks with disciplinary logics of power.

For Chapter Three ("Variegated Power: Reading Foucault through Peck, Brenner, and Theodore") I focused on reading Foucault through the lens of Peck-Brenner-Theodore's work on variegated capitalism and neoliberalism. There are many reasons I find myself drawn to their work. I find it both systematic but also flexible enough to account for uniqueness and diversity. Their work is geographically sophisticated. Their work synthesizes both historical questions and contemporary phenomena and argues for the need to understand them in relation to each other. They have incredibly rich style: their rhetoric and mode of argumentation is dense, clever, and suggestive; their arguments efficiently synthesize multiple concepts and sources of influence; and their habit of repetition with slight variations continues the thread of arguments yet accumulates nuances and connections. They skillfully position themselves at the nexus of some of the most interesting currents of contemporary thought. They are driven in their work by matters of great social importance.

In addition to all of these reasons, I felt as if what they were doing had significance beyond their own specific project. Some of this perspective on their work is undoubtedly due to my own position as a scholar working within a Foucauldian lineage (that is, I read their work in the context of my wider interests in studies of power). Reading Peck-Brenner-Theodore with an interest in power, coupled with an ongoing rereading of Foucault, made me realize that there are interesting echoes between the two. There are ways in which Foucault's own work includes some aspects of variegation and ways that his work could be supplemented and improved with additions from Peck-Brenner-Theodore. In order to identify these echoes and supplements, I crafted from the work of Peck-Brenner-Theodore five key principles that I say are applicable to a general theory of power (though in this chapter I just focus on three). For each of these principles, I provide details on how I see them as also operating within Foucault and on how I see them possibly modifying and extending Foucault's work.

Rereading Foucault through the lens of the principles of antagonistic embedded emergence, uneven-multi-path diffusion, and path-dependent reinvention reveals moments and dimensions of his

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work on power that are often overlooked in studies that depict his regimes of power as fully formed and completely stable. These principles from Peck-Brenner-Theodore help uncover a Foucault attuned to the complexities of the emergence, spread, and consolidation of a regime of power: how systems emerge as reactive and opportunistic solutions to dysfunctions in previous regimes; how new techniques of power diffuse along diverse temporal, spatial, and institutional pathways; and how systems of power are both troubled and provoked to evolve not only by forms of resistance, but also by a variety of agitations and dysfunctions that disrupt its operations. Reading Foucault through Peck-Brenner-Theodore also discloses some possibilities for supplements for Foucault, including a focus on the cumulative impacts and extended time scales of transitions between regimes, the critical role of policy actors and networks, the innovations of power at multiple scales (and how these affect relations between such scales), and the path-dependency of always-evolving systems of power. These supplements enrich and reshape a Foucauldian framework that is particularly relevant to understanding today's geographically extensive, multi-scalar, functionally diverse, and remarkably innovative systems of power.

One of the reasons I wrote the control programs chapter was that the most interesting conversations about the legacy of Foucault and the most interesting applications of his work today revolve around the spread of new surveillance technologies and shifts away from disciplinary forms of power. To me, these are the most compelling work being done today within the lineage of Foucault. The idea for this chapter was initially formulated as an attempt to update and rewrite the central three chapters of Foucault's *Discipline and Punish* for today. I also wanted to write this chapter because I think Foucault's work could benefit tremendously by including some of the high-quality scholarship written on new forms of surveillance and control. I wanted to explore how his work needs to be altered or supplemented to be applicable to these new systems and phenomena.

To write this chapter I identified an example (the RTCC and LMSI) of a particular system that I thought bore some resemblance to the Panopticon in Foucault both in its actual structure and operations as well as in the ways it exemplifies many of the most important logics of contemporary systems of power. I drew upon contemporary surveillance and control studies literature to identify the primary techniques

(and their various aspects) of the new logics of power. This gave me an opportunity to map out what I think are the most compelling lines of research within surveillance and control studies and draw out relations between them. My goal was to examine how these logics were consistent with or divergent from the main logics that Foucault described as disciplinary techniques: hierarchical observation, normalizing judgment, and written examinations. I identified a different set of preeminent techniques of power and refer to them as the distributing tracking, statistical profiling, and automated assessments of 'control programs'. In this chapter I also call attention to the parallel uses of these logics in other institutions, such as medicine, marketing, military, logistics, transportation, and others.

The significance of this chapter for me is that Foucault's work and his type of work are still relevant, even if he has to be updated. A Foucauldian framework can still be useful for identifying a core set of techniques of power, analyzing institutional transformations, and drawing out interconnections between institutions as well as between an ensemble of techniques of power operative in a particular period. Direct comparisons with Foucault's own schema of disciplinary power not only hold heuristic value due to Foucault's centrality in discussions of surveillance and control, but that framework also makes possible an organization of the immense and growing contemporary literature on surveillance and control. Also, while the chapter includes references to non-urban examples, the focus on the RTCC and LMSI, and the significant number of urban examples used, raise the possibility of developing a Foucauldian approach to urban studies. In particular, an approach that is more directly derived from his superior genealogical period and *Discipline and Punish* in particular, rather than alternative approaches that have formulated such a framework from later his lectures on biopolitics and governmentality.

The book reviews that follow each chapter provided me a chance to engage directly with some interesting works that I was not critiquing or drawing on directly in the main chapters of the dissertation. I consider the book reviews good professional practice and a unique way to do a selective literature review that includes some examples of the Foucault consensus (such as *Michel Foucault Key Concepts* and *How to Read Foucault*) and gave me an opportunity to discuss books I have been especially influenced by, but less because I agree with the content of these works, and more that I admire the spirit in which they were

written (Deleuze's *Foucault*) and the type of project they present (Nealon's *Foucault Beyond Foucault*).

Each of these works also presents contrasts to the work I do in the main preceding chapters: the predictable choices and applications within *Michel Foucault Key Concepts* (hopefully) contrast with the very different selections and suggestions of the preceding lexicon; the failure of Oksala's *How to Read Foucault* to provide a strategic and fresh reading of Foucault is meant to contrast with the unusual exploration of Foucault and technology; Deleuze's creative but frustratingly abstract and misfocused monograph on Foucault contrasts with Chapter Three's original, inventive, and detailed use of variegation to reread Foucault; and Nealon's *Foucault Beyond Foucault*, while serving as an inspiration and model for empirically and conceptually updating the work of Foucault throughout this dissertation and in particular Chapter Four's discussion of control programs, yet serves as foil for my own project due to its unconvincing reading of Foucault and method of updating Foucault through vague assertions and muddled cross-paradigm mergers.

While my immediate goals for the work done in this dissertation consist of new drafts and strategizing about publishing possibilities, I also intend for the work to serve as part of a platform for future projects. To conclude this dissertation I would like to quickly outline a couple of these projects to provide a sense of the kind of work I think this dissertation has led to and will help me conduct.

The first expansion of the dissertation will comprise an extension of my work on the Real Time Crime Center (RTCC) in New York City. As noted in the dissertation, these crime centers have spread quickly around the country over the last decade. Boston, Philadelphia, D.C., Chicago, Memphis, Houston, Oakland, and Los Angeles have all already or will soon construct RTCC-like systems. This project will not only draw upon my work on control programs, but will emphasize the echoes and supplements between Peck-Brenner-Theodore and Foucault on uneven, multi-path diffusion. I will focus on developing a Foucauldian framework for studies of variegated policy mobilities. While New York City has served as the primary model to be imitated, the actual implementation and operation of these systems in different cities leads to quite different results. I want to study how these centers diffuse (the key actors, the spatial and temporal patterns, the transformations of the model as it moves), their distinctive types and

uses of technologies, their spatial distributions, their varied alterations of police practices, their interconnections with other local institutions and systems, the dysfunctions and agitations they respond to and produce, and their uneven integration of local populations into their programs. I intend to apply for an NSF grant for this research and I see it as an opportunity not only to develop the ideas in this dissertation, but also begin tackling the question of how to conduct a more empirical, present-focused methodology for studies indebted to Foucault.

A second avenue of post-dissertation research will examine the innovations in logistical networks and their implications for other institutions and systems of control, in particular within cities. My sense is that logistical systems have been among the key developers of logics of control programs. Efforts to improve the speed, precision, and efficiency of supply chains of various sorts have dramatically increased the capabilities of governments and businesses to track, profile, and assess their workers, customers, citizens, and enemies. This research will begin with a background account of the evolution of logistics in the twentieth century, then proceed to analyze how new information, communication, and transportation technologies have transformed the logistical systems of governments, militaries, and private companies. This work will mirror some of the moments in Foucault's analysis of the role of the military as a developer and diffuser of early disciplinary practices, as many of the innovations in contemporary logistics reshaping private sector supply networks and the infrastructures of our cities have their source in innovations in the hardware, software, and organizational methods that emerged within military supply chains. The logistical innovations and models developed during the recent Revolution in Military Affairs, as well as breakthroughs by companies such as Wal-Mart, UPS, and Amazon, will be analyzed closely. The variegated nature of these transformations, both in terms of geography and operation, will be emphasized.

Lastly in this series of expansions on my dissertation, I intend to use an updated Foucauldian framework to contribute to the new discourse of Critical Smart Cities Studies. New types of data-driven urban planning have emerged that seek to use advanced and ubiquitous sensor technology, complex modeling programs, and big-data analytics to reorganize the transportation, communication, and energy

infrastructures of urban areas. These transformations are depicted as efforts to make cities more environmentally sustainable, economically competitive, and enjoyable to live in. Yet Smart Cities policy paradigms are also deeply implicated in worrisome expansions of state and private surveillance, increases in technocratic political decision-making, and neoliberal restructurings of urban areas (and all its attendant class biases, gentrification, and spikes in inequality). This research will be a part of developing a Foucauldian framework for urban studies, one focused on the spread of a specific ensemble of techniques, a particular set of spatial distributions and temporal series, the crafting of certain kinds of bodies and compositions. I want to examine how Smart Cities programs both exemplify and serve as an increasingly important method of diffusion of the tracking, profiling, and assessing of control programs. The role of key policy networks, including actors such as IBM and MIT will be analyzed. This line of research will document and critically analyze the spread of a Smart Cities paradigm in a host of cities both within the US and abroad and include some comparative studies of their variegated impacts.

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