

CYBERNETICS AND THE PENAL COLONY: A HISTORY OF CAPITAL,
MACHINERY, AND FRENCH COLONIAL IMPRISONMENT

A Thesis
by
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Abstract

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Cybernetics and the Penal Colony is concerned with the history of the French penal colony in French Guiana, as well as the general history of industrial capitalist governance. This thesis asserts that the penal colony appears and functions as an identifiable technology of capitalist production, a function that mirrors the organization of human-machine relationships in the factory and elsewhere. Readers interested in cybernetic and Marxist theory will find use in the explorations of this thesis. Further, this contributes to scholarship more directly on the history of imprisonment from France and its Middle East and North African colonies. This thesis employs a principally Marxist framework, with consideration to Foucauldian, postmodern, and cybernetic theory. Cybernetics serves as the historical and theoretical context for the thesis' primary arguments. This paper finds that the penal colony appears as the first and most adequate manifestation of cybernetic governance. Capitalism employs cybernetics in line with its connection with the organization of machinery. The machine mirrors organic systems like the neuron, but it subsumes the human relationships surrounding it, transforming them into organs of capital's domination of human society in Europe and the colonial world.

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Introduction

This thesis is a history of incarcerated peoples from the Middle East and North Africa who were subject to the imposition of and enforcement of a French legal structure through colonization. Those incarcerated bodies were subject to conditions of slave labor, physical and mental abuses, and almost always lives of suffering and eventual death when sentenced to the penal colony. Albert Londres' infamous account of the penal colony in French Guiana suggested that nine out of ten prisoners sentenced to the colony died within their first year. Londres' book was immensely impactful and was considered as inspiration for the elimination of double-sentencing in the penal colony, where prisoners were expected to live an equivalent-to-lifelong sentence in Guiana before being granted the ability to return to their home countries. It cannot be understated the profound torture and agony experienced by prisoners in the penal colony. The conditions of slave labor, malnutrition, and medical care deprivation shaped the fundamental characteristics of the prisoners' lives. To this end, this paper seeks to assert first and foremost that the traumas of both colonization and incarceration on the lives and memories of the prisoners are constant in the historic documentation of the carceral experience.

The use of French Guiana as a formal penal colony began in 1852 by decree of law from Napoleon III. Though the law began with the Second Empire, it persisted well into the 20th century and long after Napoleon III's tenure as head of state. The law deported prisoners from France and the MENA colonies and sentenced them to hard labor in French Guiana. Jean-Lucien Sanchez argues that the penal colonization of French Guiana allowed for Napoleon III "to get rid of convicts" from the metropole while also economically stimulating

the ‘underdeveloped’ French Guiana. It may be sufficient to refer to the prisoners in French Guiana as slaves, however the comparison takes away from the brutality that the term ‘prisoners’ should imply on its own. Sanchez argues as well that interactions between wage-slaves and prisoner-slaves may kindle class antagonisms, thus the geographic distance between the French factory and the prison-factory reinforced the aims of Napoleon III’s penal colony law.¹

Existing literature on the French Guiana penal colony largely focuses on the question of labor and class antagonisms in France. Numbers of laborers and economic outputs are focused on significantly, which seems natural considering the focus of Napoleon III’s law on labor and economics. Sanchez highlights the policy of doubling, which Albert Londres’ also focused on in his seminal work *Au Bagne* which was later used as the primary motivation for abolishing the same policy in the early 20th century. Doubling made it so convicts were not easily able to return to metropolitan France or their colonized homes. Instead, they were made to remain in the penal colony for a period of time equal to their original sentence not as laborers but citizens.² Of course, one cares little if they are actually called a prisoner when they are forced to remain in the prison all the same as the other formal ‘prisoners.’

The penal colony was certainly a site of class conflict and power struggles. Russian anarchist Peter Kropotkin argues that the existence of capital and the state presumes the existence of crime.³ Crime and punishment are central aspects of the coercive apparatuses of

¹ Jean-Lucien Sanchez, *The Penal Colonization of French Guyana, 1852-1953*.

(Guyancourt: Centre de Reserches Socilogiques sur le droit et les institutions pénales).

² Jean-Lucien Sanchez. “The French Empire, 1542–1976.” In *A Global History of Convicts and Penal Colonies*, ed. Claire Anderson, (London: Bloomsbury, 2018), 12-14.

³ Peter Kropotkin, “Are Prisons Necessary?” in *In Russian and French Prisons*, (London: Ward and Downey, 1887). Accessed via. Marxists Internet Archive,

the state. Capital and the state require a criminalized population that it can exploit. Its monopolization on violence and dictatorship over the very forms of life of its subjects are reflected absolutely in the form of the prison, even more so in the penal colony. The penal colony in French Guiana is no exception of these realities of capital and the state.

This thesis engages with a broad realm of theoretical and secondary literature. The principal theoretical aim of this thesis is to advance a Marxist understanding of prisons, technology, and the state. The central object of analysis then is the capital relation as it appears in the penal colony of French Guiana. The existing marxist literature on technology and the capital relation is immense. Ernest Mandel's magnum opus, *Late Capitalism*, asks how the development of capital and the state can be "analyzed in their appearance and explained in their essence."⁴ Outside of marxist language, Mandel simply asks how the history of capitalism can be understood through examining its material base and abstract super-structural apparatuses. The history of the machine, the material form of the capital relation, holds the history of the material forces of capitalist production. In appearance as the history of materials, and in essence as the tensions between dead and living labor, both embodied in the production process as parts of a whole.

The literature that examines these machinic relationships begins with the tradition of English mechanical philosophy, its scientific aspects utilized by Smith, Ricardo, and Marx.

<https://www.marxists.org/reference/archive/kropotkin-peter/1887/in-russian-and-french-prisons/chapter-10.html>.

⁴ Ernest Mandel, *Late Capitalism*, (New York: Verso, 1975), 22.

Marx most appropriately articulates the materialist condition of the machine in the *Fragment on Machines*, and the essays edited by Engels and published as *Theories of Surplus Value*.⁵

The literature on machinery and technology developed in the 20th century to include another theoretical and scientific tendency: cybernetics. Cybernetics began most notably with Norbert Wiener's *Cybernetics* and *The Human Use of Human Beings*.⁶ Wiener's works on cybernetics are the foundational works of the field of cybernetics. Wiener conceptualizes human society as a complex organism inclusive of machines and their implements. These organisms too are part of a larger system in constant communication and control of each organ of the system. Many of Wiener's findings mirror those in Alexander Bogdanov's *Tektology* nearly a half-century before.⁷ Bogdanov proposed, in a directly Marxist lens (much unlike Wiener) that "all human activities are essentially ... organizational."⁸ Bogdanov considered human labor to be one of many organs of a self-organized, self-regulating natural system. He continues, "nature is the first and greatest organizer; and a human being is only one of its organized creations."⁹

Bogdanov's findings represent an early articulation of the synthesis between natural science and Marxism. Bogdanov develops, on a larger scale than Marx's findings on machinery, the importance of considering the confrontation between dead and living labor as the basis of all human society. This is articulated most notably in the machine. However, if

⁵ Karl Marx, "The Fragment on Machines," in *The Grundrisse*, trans. Ben Fawkes, (New York: Penguin, 1973). And Karl Marx, *Theories of Surplus Value, Volumes I-III*, (New York: Radical Reprints, 2020).

⁶ Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society*, (Boston: De Capo Press, 1998).

⁷ Alexander Bogdanov, *Bogdanov's Tektology*, ed. Peter Dudley (Hull, UK: Center for Systems Studies, 1996), 1.

⁸ *Ibid.*

⁹ *Ibid.*, 5.

the machinic relationships of capitalist production form the basis of human society, how far can an understanding of machinery be stretched? This thesis of course considers the prison to be the most notable of these machinic apparatuses at the basis of society.

Though Bogdanov was a precursor of cybernetic theoreticians, his “tektology” identified distinct laws that resemble near-identically many of the theoretical findings both outside of the Soviet Union and decades after Bogdanov in total isolation from his works. Bogdanov theorized the laws of ingression and regulation, the exchange of organs and information between systems, and natural self-regulation through systemic homeostatic decision making, respectively. Bogdanov’s law of ingression is identical to the laws of systems theory that developed decades later outside of the Soviet Union, while his law of regulation reflects the feedback principle that became the basis of cybernetic thought in Weiner, Ashby, and the Macy Conferences after World War II.¹⁰

This thesis employs Marxist theories, in various tendencies and from various centuries, alongside a wealth of knowledge and literature provided from the cybernetic tradition. As Ross Ashby finds in *An Introduction to Cybernetics*, cybernetics is the science of man and machine alongside one another. This statement makes clear the importance of a cybernetic Marxism for this thesis. It is a history of the machine, told through a case study of the penal colony *as machine*, that considers the penal colony to be a site of confrontation between man and machine as dead and living labor. Cybernetics supposes that humans and machines comprise a single social mechanism, much like Bogdanov’s ideas decades earlier. Where Foucault and Tiqqun have been concerned with civil war, or, tensions of difference,

¹⁰ George Gorelik, “Bogdanov’s Tektology: Its Nature, Development, and Influence,” *Studies in Soviet Thought*, 26 no. 1: 40.

Ashby asserts that these tensions of difference are “the most fundamental concept in cybernetics.”¹¹

History is largely just the accounting and analyzing of difference over time. The difference over time of difference itself then requires literature that considers difference as theoretically important. Here, Marx’s dialectical materialism in *The German Ideology* provides the theoretical framework.¹² Michel Foucault identifies that modernity, which is of course associated with technologizing and “progress,” might be considered the repression of difference by way of the state. The state functions as a regulator of divergence. As it goes, the prison appears as the most absolute regulator of this difference. As such, this thesis engages with Foucault’s work on prisons in *Discipline and Punish* and the College de France lectures. Foucauldian literature takes significant space in scholarly conversations on imprisonment, but this thesis finds it unsatisfactory when concerning the colonial question. While Foucault frames the colonial prison as simply *affective* of French capitalism, this thesis argues that in truth, the penal colony represents a significant organ of capitalist production wherein the history of the capital relation can be observed absolutely.

This project is principally a theory of imprisonment and the state, and a history of the incarcerated peoples in and from the Middle East and North Africa during the years of French colonization. These prisoners were near universally racialized as “Arab” through carceral policy despite their diverse national, ethnic, racial, religious, and sectarian backgrounds. It is through this racialization of experience and identity that the French state creates and imposes an Orientalized conception of the “Arab” on *all* indigenous people of the

¹¹ W. Ross Ashby, *An Introduction to Cybernetics*, (Seattle: Martino Fine Books, 2015), Ch. 2.

¹² Karl Marx, *The German Ideology*, (Buffalo: Prometheus, 1998).

Middle East and North Africa. This experience is mirrored both in colonial society in general and the racialized and segregated system in the penal colony. As such, despite the project being principally a history of the native people of the Middle East and North Africa, it is also a history of the French state and its development and imposition on colonial, postcolonial, and French society. However, this project seeks to identify the manner in which the state becomes internalized through the carceral project, and as such, it examines the lives of French prisoners and citizens in similar interrogations. In short, the project is a history of France and the French MENA colony simultaneously, but this transnational history takes this approach precisely because a history of colonial carcerality cannot be understood except through a two-fold examination of its systems.

The essays in this thesis are intended to target directly three principal conversations I have engaged in during the completion of my M.A. at Appalachian State University. The first chapter seeks to explore the theoretical implications of cybernetics and imprisonment in line with the Foucauldian discourses amongst Marxists and post-Marxists in the scholarship. To this end, this chapter engages with the conversations surrounding Foucault and postmodernism I have engaged in during my studies with Michael Behrent. The second chapter engages more directly with my primary studies in Middle East history supervised by my primary advisor, Elizabeth Perego. This second chapter seeks to incorporate the theoretical framework and findings from the first chapter towards a practical case study of the penal colony in French Guiana and the memories and experiences of “Arab” prisoners in the colony. Finally, the third chapter functions as a culmination of the theoretical and historical findings of the first two chapters, taking advantage of the training in Marxist theory and historiography I have received from my advisor and friend, Jeffrey Bortz.

The first chapter concludes that the penal colony appears as the first experiment in cybernetic governance. It seeks to frame the penal colony as a technological apparatus of French capitalism, and as such, representative of the generalized form of colonial capitalist crisis and the capital relation. The second chapter forwards this central thesis through a case study on French Guiana, concluding that the primary means of hierarchical organization of the cybernetic apparatus occurred through the racialization and economization of identity of “Arab” prisoners in French Guiana. Lastly, the final chapter concludes through a synthesis of the theoretical and historical assertions of the first two chapters that while the penal colony appears as the first case of the cybernetic apparatus as an appendage of governance, the cyberneticization of capitalist production suggests that capital is not only the physical embodiment of alienated labor, but a conscious entity that follows distinct natural and physical laws of the world.

Chapter I

Cybernetics and the Penal Colony: French Guiana and the Development of the European and Colonial Nation-State

“In both theory and practice, the modern state came into being in order to put an end to civil war, then called ‘wars of religion.’ Therefore, both historically and by its own admission, it is secondary vis-à-vis civil war.” Tiqqun, Vol. 2.

The colony is most appropriately understood as a unique technology in the process of capitalist development. The colony existed to alleviate the tendency of the rate of profit to decline under the national borders of capitalist economies through the production of economic wealth to be expropriated by the metropole. This process resulted in an impoverished colonial world and an enriched colonialist and imperialist European nation-state model. The fundamental characteristics of this colonizing-colonized relationship is a form of social-economic domination necessitated by the tendency of the rate of profit to fall.

Previous scholarship on cybernetics, notably Giorgio Agamben’s Tiqqun project, have framed cybernetics in the Marxist tradition as a technological mode of governance similar to the conversations on governmentality in Foucault’s work. This post-marxist perspective is insightful, but often lacks the rigid Marxist theory that characterized previous Marxist perspectives on the State, as in Lenin’s *State and Revolution*.¹³ More contemporarily, Eric Laursen’s *The Operating System: An Anarchist Theory of the Modern State* frames the history of the European nation-state model as an analog to modern computer operating systems.¹⁴ This is a vulgar comparison on which the entire book hinges, but it synthesizes anarchism and contemporary computer science in a manner that requires further

¹³ V.I. Lenin, *The State and Revolution*, (Seattle: Martino Fine Books, 2011).

¹⁴ Eric Laursen, *The Operating System*, (Oakland: AK Press, 2021).

investigation. Like computers, the state is organized in a hierarchical manner with predetermined conditions for change. The comparison between modern operating systems and the state is appropriate; but is it only the computer that mirrors this organization? And which came first, the organization of the machine or the organization of human society? This thesis answers this question by proposing that cybernetics, rather than simply digital computers, is the basis of the mechanized society of modern capitalism. The cybernetic system first appears in the penal colony, which is the focus of this thesis.

Timothy Mitchell's *Colonizing Egypt* reframes Foucault's arguments on colonial disciplinary order to contribute to Western theoretical debates on order and the panopticon. On the other hand, Ervand Abrahamian's *Tortured Confessions* highlights the importance of technologized torture systems for establishing disciplinary order in the Islamic Republic of Iran. By utilizing television broadcasts, the spectacle of torture spreads much in the same manner as Damien's public torture in the opening pages of Foucault's *Discipline and Punish*.¹⁵

This thesis intervenes in two aspects of the scholarship: marxist theories of the state, and the historiography of the colonial nation-state in the colonial Middle East and North Africa. This thesis answers questions concerning broadly the history of cybernetics, governmentality, and mechanized capitalism in the 19th and 20th centuries that have previously been ignored from vulgar marxist, anarchist, or postmodern perspectives. This intervention seeks to highlight the interconnectedness of the history of the state in the

¹⁵ Timothy Mitchell, *Colonizing Egypt*, (Berkeley: University of California Press, 1991), and Ervand Abrahamian, *Tortured Confessions*, (Berkeley: University of California Press, 1999) and Michel Foucault, *Discipline and Punish*, (New York: Vintage Books, 1995).

colonial and imperial worlds by way of synthesizing contemporary and historical theories of human organization in mechanical society.

This thesis argues that the machine confronts humans as the physical manifestation of capital. Technology is first the most articulated manifestation of capital in the industrial world. Further, the organization of technology and capitalist modes of life mirror each other in a manner that reflects the general tendencies of cybernetic governance.

Whereas the general form of the colonial state is most appropriately understood as a technology of capitalist production, the penal colony is most appropriately understood as a *cybernetic* technology. Though the penal colony is manufactured by the European nation-state, I argue that it produces within itself the means for its own self-regulation characteristic of the cybernetic apparatus. This apparatus operated as the testing grounds of cybernetics towards the eventual application of cybernetic governance in the metropole.

Cybernetics is principally a field of study concerned with motion and control. The cybernetic apparatus accumulates knowledge in such amounts that allow for the mechanization of a population. Through the management of knowledge/power through cybernetic governance, cybernetics can be understood in the context of Marxist historiography as a governmental technology of information employed towards an end of managing all potential outcomes of a territorialized population.

The primary role of the cybernetic apparatus is the reduction of human experience into a machinic analog. This reductive process homogenizes human experience and memory into those compatible with its territorialized mode of governance. The secondary role of the apparatus is the imitation of human production in the machine.¹⁶ The accomplishment of

¹⁶ Tiqqun, *The Cybernetic Hypothesis*. (Cambridge: Semiotext[e], 2020), 42.

these two aspects of the cybernetic apparatus is the absolute internalization of the state by society. In this sense, the entirety of cybernetic capitalist society is capable only of the simple production and reproduction of capital and the state. The cybernetic apparatus does not seek the understanding of futures, nor does it seek to advance towards the future despite its technological implications. Rather, its goal is the recreation and reorganization of the capital relation.¹⁷

This project theorizes the penal colony as a technology of capitalism capable of reproducing itself in diverse assemblages of unchanging components. As such, the subjects of the penal colony are theorized as machines that comprise a larger technological system characterized by the capital relation in all aspects of experience. Because the cybernetic apparatus subsumes all aspects of experience, past, present, and future, and transforms them into those characterized by the constituency of the capital relation, the study of prisoners' experiences in the penal colony reflects the eventual experience of the entirety of society's machinic unconscious as governed by the cybernetic apparatus.

The penal colony was a unique technological apparatus in the development of the nation-state model. While Foucault suggests that the state is a reflection of existing and historic conditions of carcerality in early-modern Europe, the penal colony, and all forms of colonial carcerality and statehood, are directly employed as technologies of capitalism aimed towards the development of the capabilities of European governmentality. This project proposes that the penal colony was a critical aspect of the development of 19th-20th century European capitalism and through studying the unique circumstances of race, power, and

¹⁷ Tiqqun, *The Cybernetic Hypothesis*, 56-57. And Simon Clarke, *The State Debate and Marx's Theory of Crisis* (Kiev: Bootleg).

capital in this cybernetic prison we can develop a greater understanding of the history of the nation-state, as well as a further understanding of the tensions of modernity and capitalism in the Middle East and North Africa.

Static Crisis

Capitalist crisis is a historically particular condition characterized by the tendency of the rate of profit to fall and the relative accumulation of capital by a ruling-class.¹⁸ As Simon Clarke suggests, crisis is the condition of capitalist constituency. The accumulation of capital allows for the subsumption of entire modes of life into that of the life cycle of capital.

Industry subsumes all aspects of the human experience, and transforms all experience into mere commodity fetishes. The law of the tendency of the rate of profit to fall $[S/(C+V)]$ and its related processes primarily expand the capital relation both geographically and socially.

This expansion notably took place in the penal colony, with reverberations beyond this territory into the French Empire and France, where the cybernetic apparatus governed and automated the carceral mode of life in French Guiana during the 19th and 20th centuries.

Crisis can be referred to as moments in the history of capitalist production, but it more aptly refers to the condition of the capital relation and its totalizing behavior. Because the state seeks to reproduce the present, indefinitely, and crisis is the means by which the state subsumes human experience, crisis is simply the primary condition of the domination of human experience by the state. This thesis theorizes the state as a particular expression of this capital relation that characterizes the development of static conditions of history. This paper positions the development of the penal colony as the following: First, the conditions of capitalism in the European sphere developed their internal contradictions in a manner that

¹⁸ Simon Clarke, *The State Debate*, (Kiev: Bootleg) 97-99.

necessitated the internationalization of labor, or colonization and imperialism. The internal contradictions of European capitalism often took the form of carceral institutions whereby the working-classes of the various European states were imprisoned in numbers relative to the rate of capital accumulation and ‘moments’ of crisis. Second, the internationalization of capitalist production imposed a new capital relation on its subjects whereby the experience of European labor was temporarily stabilized, despite immense fluctuations in the rate of profit, through colonial plunder of the Middle East, Africa, Asia, and the Americas. The entirety of this colonialist-imperialist endeavor of European capital in the 19th and 20th centuries can be summarized as the export of capitalist crisis and the imposition of the capital relation and its developed stages on previously untouched spheres of production in the colonial world. Lastly, the sites of export for the crises of European capital then developed their own internal contradictions and crisis relations, prompting the various European states of the colonial world to again engage in the practice of imprisonment and carcerality in the colonies.

Whereas national capitalism in Europe eventually led to the export of crises to the colonial world, the growing contradictions of colonization and imperialism led eventually to the export of sorts of carceral subjects from France and the colonies to the penal colony in French Guiana. European incarceration is first and foremost a consequence of national crises of production in Europe. However, the penal colony represents a unique stage in the development of the nation-state model in general, as well as the lifecycle of the colonial nation-state in that it positions the European state one degree further from the immediate consequences of its crises, while also imposing material relations of crisis on the colonial body without any ability to reconcile these crises in the same manner as the European state. In this sense, the European state was able to separate its cybernetic apparatus and its unique

nation-state model from its carceral exports. However, the colonial and post-colonial nation state has not and cannot do the same. Thus, the colonial and post-colonial nation-state model always has been and always will be fundamentally a state of permanent carcerality. The export of crisis into the colonial world provided the condition for the development of a carceral history and an environment of carceral material conditions, allowing for the 19th and 20th European condition of crisis to reproduce itself always and forever in the colonial world as a static and cybernetic apparatus.

This thesis argues that the cybernetic apparatus developed directly from the crises of European and colonial carcerality. The penal colony isolated the unpredictable processes of capitalist production in the colonial and European world. As such, the penal colony functioned as an enclosed environment to be used as the testing grounds of the static response to crises of production. Through isolation, the penal colony formed a feedback loop of information, behavior, experience, and ideology. The cybernetic apparatus developed alongside these spaces of isolation and homogenization. Through the mechanization of human experience in this now cybernetic penal colony, cybernetics became the system of governance that expanded into the carceral societies produced by and producing the penal colony.

Generalized cybernetics transforms the relationship between human experience and technology. Whereas capital subsumes aspects of human experience over time through the development of the state and its crises, cybernetics creates a totalizing environment that characterizes human experience under it through the constituency of capital in a rhizomatic manner on human relationships.¹⁹ While Marx was once concerned with an organic

¹⁹ Tiqqun, *The Cybernetic Hypothesis*, 61.

composition of capital, that is, the ratio of humanity and industrial machinery in the production process, cybernetics transforms the two seemingly opposing forces of production, organic and machinic, into a single capital relation. Tiqqun, an affinity group of French anarchist authors associated with The Invisible Committee and the Tarnac Nine bombings, suggests that cybernetics is the transformation of all labor into a rhizomatic autonomous productive machine.²⁰ Thus, the constituency of capital characterizes all productive forces of the cybernetic society, but this constituency came *first* from the penal colony, and spread outwards like a virus infecting all proceeding relationships of capitalist society.

The constituency of capital directly resembles the development of individualized forms of knowledge. Human experience, considered individually, forms the basis for individual knowledge, but cybernetics allows for the subsuming of all experience, whether they be past, present, or future experiences, into a rhizomatic system that imposes a *model* of knowledge, collectively and socially, on the entirety of human society within its environment.²¹ While Foucault referred to the conduct of conduct in human society as governmentality, cybernetics refers to the dispossessed conduct of society. It is the presumption of the nonlinear conditions of conduct and the conduct of conduct, and the application of this knowledge as a model on society towards the conduct of conduct of government.²²

The prison, though largely unproductive in the Marxist sense, involves the expropriation of time rather than money by a carceral administration (usually the state). The

²⁰ Ibid., 60.

²¹ Gilles Deleuze and Felix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, trans. Robert Hurley. (New York: Penguin Classics, 2009).

²² Norbert Wiener, *Cybernetics: Or Control and Communication in the Animal and Machine*, Second Edition, (Seattle: Martino Fine Books, 2021), 151-156.

exploitation that occurs in the prison mirrors the exploitation in the factory. Rather than time being directly translated into money, as in the factory, time remains the primary measure of the capital relation, and instead of its transformation into money, time remains the measure of capitalist development in the penal colony. *However*, because the cybernetic apparatus reduces human experience into the reproduction of a static present *forever*, a sentence to the cybernetic prison can be summarized not as a life sentence, but a transformation of all human experience related to the cybernetic prison into a principally carceral and capitalist existence. Within the enclosed environment of the cybernetic prison, the life-time of the prisoner becomes circulated and consumed by other prisoners, and vice versa, allowing for the individual experience of each prison to then define the experience and existence of their fellow prisoners. In this vulgar economy of existence, cybernetics finds the perfect testing grounds for its development. Experiences become constituent and dispossessed from their producers, homogenizing through diversity the past, present, and future experiences of the prisoners in the penal colony and its carceral society.

The Marxist conception of history provides the general framework for this project's analysis of the penal colony and the cybernetic apparatus. It is from the theoretical foundation of Marx, Foucault, and others that this project utilizes the archive and theory as discursive elements in its account of history. Much in the way that the cybernetic apparatus interacts with and produces rhizomatic environments in the penal colony, this project attempts to treat the relationship between theory and the archive in a similar manner, placing them in conversation with one another towards an end of the development of the theoretical limits of Marxism and history.

This chapter has established the theoretical implications of the penal colony as a technology of capitalism, to an extent that this project frames the penal colony as a cybernetic prison and a site of carceral self-government. The capital relation saturates all experience in the cybernetic prison, and as such, the state reproduces itself in memory and archival representations of the history of the penal colony. As such, the archive appears as voice and memory of the state, and requires a rigid theoretical approach to unpack the static apparatuses present in seemingly absent circumstances.

Self-governance in the cybernetic prison mirrors the self-governance in constituent relationships of capitalist production and the domination of the state. Marx articulates the self-governance of capitalism in the general circuitry of capital specifically in relation to the production of capital and moneyed relationships in human society. Foucault proposes that the societies of punishment in pre-modern Europe were instrumental in the creation of the modern state, but this project goes one step further to propose that colonial imprisonment is both a unique manufacture of the state, as well as an apparatus of capitalism that *then* further develops the generalized nation-state model. Because of this inverted relationship in colonial imprisonment compared to Foucault's studies of European imprisonment, the cybernetic prison is thus a manifestation of the consequences of European crisis. However, crisis too represents an inverse relationship across national borders. If the colonial prison is a consequence of the crises of European national production, then it is also the producer of crisis in the colonial world, mirroring the opposite tendencies of the rate of profit in the imperial core and the colonial periphery.²³

²³ Thomas McLamb, "International Capital and the Imperial Periphery: A Marxist Case Study of the Tendency of the Rate of Profit to Fall and its Conditions in Lebanon, 1997-2018." *Peace, Land, and Bread* no. 4, (2021).

As the penal colony represents such a unique development in the history of the state, the cybernetic prison appears within the circuitry of capital in a similarly unique manner to that of the 19th century European prison. The general circuitry of capital can be summarized as the transformation of less money into more, indicated by $M \dots M'$. However, this transformation does not occur without occasional contractions in moments of crisis. These contractions occur when the materials and labor purchased with M are unable to be used in a profitable process of production. In short, this can be referred to as a crisis of overproduction because the market has deemed these commodities socially unnecessary, thus they are not sold at a profit and the sphere of capital is typically subsumed by another or simply goes by the wayside. The particular response to the macro-level crises of overproduction that characterize the circuitry of capitalist production that this project is concerned with is that of the carceral system. In a colonial context, the imposition of carcerality represents an end-stage of colonization proper whereby the state acknowledges the unprofitable aspects of colonization and attempts to subsume and isolate them into distinct territories.

Lenin's *State and Revolution* proposes that power and the state are synonymous with one another. The claim of the state as merely an instrument of class rule is reductionist. Power is not something that is used, but rather, an expression of the state that possesses the bodies and memories of individuals. While Lenin emphasizes that the pre-cybernetic state "consists of special bodies of armed men having prisons, etc. at their command," cybernetics advances the state into a form of internalized power commonly referred to in Foucault's *Discipline and Punish*.²⁴ The cybernetic apparatus transforms Lenin's conception of the state

²⁴ V.I. Lenin, *The State and Revolution*, (Seattle: Martino Fine Books, 2011), and Michel Foucault, *Discipline and Punish*, (New York: Vintage Books, 1995).

into an internal disciplinary apparatus that certainly relates to and contains the special bodies of armed men, but also new police in the mind.²⁵

The project of modernity is not the creation of stability amidst crisis, but the “endless mobilization” of a population in movement from one crisis to another. Modernity is the conduct of conduct, managed and governed by a territorialized population, done so autonomously under such cybernetic and pre-cybernetic modes.²⁶ With modernity, and such endless mobilizations of territorialized populations, civil war and the tensions of difference are abolished through the homogenizing dictatorships of capital and the cybernetic apparatus. Difference is subsumed and homogenized in the capital relation, in a totalizing manner under the cybernetic mode, transforming civil war into a conflict of the ambiguous past, but never the present. Much in the way that Marx proposed that capitalism simplified the history of class struggle into a simple conflict between bourgeois and proletarians, cybernetics simplified the history of class struggle into that of human experience against the state. If capitalism is experience against the state, then communism can be understood, as in *Tiqqun*, as “the real movement that elaborates, everywhere and at every moment, civil war.”²⁷

Civil war refers to the proliferation of modes of life relative to one’s historic and present material conditions. From civil war, a tension of difference, came the penal society where difference was repressed quite literally through the penitentiary and its relative penal society. The target of the penal society was not the criminal, but the differential tendencies of the population that surrounded the criminal and who inhabited the territorialized sites of governance. Where there is a penal society, there is necessarily the reduction of human life to

²⁵ Ibid.

²⁶ *Tiqqun 2*, 65-67.

²⁷ *Tiqqun 2*, 60.

that of the capital relation, but the cybernetic apparatus totalizes this reduction further, repressing all communism and possibilities of communism from the life and experience of humanity. It is in this sense that the domination of humans by the state is one of profound internalization, an anti-communist movement in totalizing form, where the state subsumes everywhere and at every moment the conditions of difference of the past, present, and future.

Consider the most basic form of Marx's circuit of capital: $M1-C-M2$. Money is used in this circuitry only to purchase *more* money. One might consider this a type of feedback system since the only function of money is to reproduce itself in exponentially increasing model sizes. Capitalism employs its unique technologies to regulate and govern this basic circuit of capital. The reproduction of this circuitry includes the stopping of motion, and as such, is antithetical to history. This stoppage can properly be understood as crisis, and since crisis is the reproduction of the present indefinitely, crisis and the state too are antithetical to history. Cybernetics seeks to understand and manage these fluctuations of motion and regulate them, much in the same way that capitalism regulates its own motion outside of crisis. It is in this sense that cybernetics and capitalism share fundamental tendencies, but they utilize distinct technologies directed towards different ends. Capitalism fundamentally drives towards crisis, but cybernetics is the relative regulation and management of these crises and tendencies. Cybernetics as such is bound by the limits of capitalism, and as such, where capitalism exists, cybernetics is limited to the reorganization of capitalist systems relating to crisis. This does not mean that cybernetics stops or prevents crisis, but rather, it transforms the diverse assemblages of capitalism production into a uniform model that cooperates with the general tendencies of production.

With this relationship outlined, it is necessary to identify where in the circuitry of capital each relative mode of production positions itself relative to crisis. Through formulating a distinct model for capitalist production in the age of the penal and colonial carceral society, this paper hopes to illuminate the means through which capitalism has permeated the development of the European nation-state model. If a generalized formula for capital is:

M-C...P...C'-M', [Where M=Money; C=Capital; P=Productivity; and ' indicates a higher valued form of the original lettered variable]

Then a crisis of production would refer to any step of the processes between M-M' that halts the transformation of less money into more. This can be caused by the inability of commodity production to be used to purchase more commodities with less, or the inability to increase productivity, or simply in moments of economic recession where the final commodity form cannot be realized on the market for a profitable value. Regardless, these crises of production occur in various stages of the formula for capital. In its earliest form under European capitalism, the prison expresses itself as a necessary technology of the state to repress and incarcerate criminalized bodies. Crime under capitalism is of course, as Kropotkin teaches us, crimes created by the manufacture of scarcity and the imposition of the capital relation on previously non-criminalized conditions of human experience.

We have established that the transition from the penal society to the society of incarceration characteristic of modernity is first and foremost the development of a state/capital relation. As such, the crisis of incarceration in Europe is immediately related to the initial repressions of difference and the abolition of civil war. So, European carcerality and the nation-state model immediately relate to the incarceration of members of a

population incapable of increasing the productivity of capital, or populations deemed actively harmful to the productivity of capital.²⁸ This positions the crisis of European carcerality within the transformation of less capital to more, or, somewhere in the circuit of C-P-C'. The crisis of European carcerality thus directly involves not the moneyed relationships of M-M', but the relationships between production and time antithetical to the fundamental tasks of the state. As such, incarceration presumes the passage of time and seeks to, through a variety of appendages, isolate unproductive populations in the prison where they become subjects of and conduits to the immortality of the state.

Since capital makes these decisions by way of crisis, it can be reasonable to say that capital is not only an advanced technology, but an artificial intelligence capable of its own self-preservation and autonomous decision-making separate from the organic aspects of capitalism. Because crisis allows for capital to appear as an artificial intelligence, the cybernetic apparatus appears more clearly as a distinct 'technology' of this intelligence.

Whereas the transition from a penal society to the carceral society of modern Europe is positioned first and foremost as a crisis of productivity in C-P-C', the artificially intelligent decision-making characteristic of modern capital externalized the reproduction of this carceral crisis to the colonial world in the 19th century. As such, this allowed for the restoration of the circuitry of C-P-C', allowing for a stabilization of the profit motive for the capitalist class. However, the externalization of crisis to the colonial world manufactured a unique stage in the development of these crises of production in French Guiana, and as such, the position of this crisis in the circuit of capital shifted relatively. Because the prison was

²⁸ The use of the productive-unproductive dichotomy here in no way refers to the racist stereotypes of laziness and unproductiveness of nonwhite laborers, but rather speaks directly to the use of the terms in Marxist theory, historiography, and Marxological work.

not concerned with the transformation of less money into more, but rather, the ability of the state to coerce modes of life into the capitalist sphere, the position of the colonial carceral crisis in the circuitry is quite different than that of the European carceral crisis.

As Marx tells us, the initial stage of the circuitry of capital takes place through M-C whereby money is simply transformed into a collection of commodities.²⁹ This is purely a market relationship, where M is used to purchase commodities already produced by another sphere of capital or produced through primitive accumulation as in the case of slavery and imprisonment. M-C presupposes an inverted relationship between two capitalists on the market. While one capitalist transforms money into the commodity, this implies another capitalist who has transformed their commodities once again into money. However, the second capitalist, the seller, may not always sell these commodities at a profit, indicated by M-M'.

Within this dual-relationship of M-C however is also the two aspects of the production process of the commodity. As Marx reminds us:

“M-C is composed of M-L and M-MP. The sum of money is separated into two parts, one of which buys labor-power, the other the means of production. These two series of purchases belong to entirely different markets.”³⁰

Where L = labor power, and MP = the means of production. Though there is only one transaction taking place between capitalist A and capitalist B, two purchases are in fact taking place relative to the productive forces.

²⁹ Karl Marx, *Capital Vol. 2*, Chapter 1, (Moscow: Progress Publishers, 1956). Accessed via. Marxists Internet Archive, <https://www.marxists.org/archive/marx/works/1885-c2/ch01.htm>.

³⁰ Ibid.

Increases in productivity appear as capital to the state. As such, the prison serves to increase productivity for *European* capital, but in the case of the penal colony, its crises occur within the circuit of colonial capital but shares a dual relationship to European capital in that it acts *as money* but appears only as the state in the colonial world. Just as M-C transactions imply the relative C-M' or C-M in its unity of opposites, crises of overproduction whereby the commodity and money forms do not translate equally produce a similar dual relationship. Crisis in one part of the transaction, C-M, translates to relative shifts in the mode of life of the second portion of transaction, M-C. A shortage of money in the transaction, a lack of profit extracted as surplus-value, translates then to a relative overabundance of the commodity needed by society. In the case of the worker as a commodity of the state, the prison is employed as a unique technology in this dual relationship to artificially isolate the overabundant commodities of the imperial and colonized capitalist worlds. The cybernetic apparatus is employed in this dual M-C-M crisis as a consequence of the absolute isolation of the worker-commodity by the state. Crises of production translate to the emergence of totalizing modes of isolated life in the penal colony. If the general formula for M-C-M' appears as:

$$C' \left\{ \begin{array}{l} C - \\ - M' \\ C - \end{array} \right. \left\{ \begin{array}{l} M - C \begin{array}{l} \text{L} \\ \text{MP...P...C}' \end{array} \\ m - c \end{array} \right.$$

Then the totalizing mode of life is represented in the dual relationships embodied in:

$$C < L // MP...P...C'$$

The penal colony positions itself thus as a crisis of the dual relationship that occurs in commodity capital, represented by the totality of L and MP. The penal colony is reflected in the European state by an overabundance of workers exported and imprisoned in Europe and elsewhere. Thus, the means of production in Europe grow relatively more productive in response to incarceration and imprisonment first in Europe, and exponentially so when crisis expresses itself as imprisonment in the colonial context. Because capitalist circuitry embodies at all points a dual relationship, a unity of opposites, of its two components, the emergence of the cybernetic apparatus in the penal colony forms a unified counter-response in Europe. The usage of the cybernetic apparatus in the penal colony, as a means of increasing productivity in the circuitry of capital, implies a unified opposite movement of the organic composition of capital (the state) in France. This forms a rhizomatic system of relationships between the mechanized circuitry of the penal colony and the organic state of France.

Chapter II

Carceral Memory and Racialized Experience in French Guiana

The Bagne de Cayenne was a French penal colony in operation for barely a century until it was closed in 1953, incarcerating thousands of condemned from France and its colonies, including large numbers of anarchist political prisoners. The focus of this study is the memories surrounding racialized Arab prisoners in the colony and the production of racialized systems of authority. The purpose of the colony was to export prisoners who placed a strain on the metropole French prison systems as well as to facilitate the forced labor of prisoners in developing the economy of French Guiana. The population of the prison was in constant states of upheaval; by one estimate, nearly 90% of prisoners condemned to the islands died within the first year of their sentence.³¹ Because of the frequent turnover of prisoners, the prison reflected larger contexts of the French State, though carceral myth and memory remained constant through veteran prisoners. This paper examines this carceral myth and memory, which it understands as the distorted stories told in the prison by traumatized actors, through memoirs from both imprisoned and administrative perspectives. The paper argues that carceral myth in the penal colony reproduced the systems of racialized power through the manufacturing of racialized systems of capitalism that mirrored and inverted the larger capitalist systems of the French state. As such, this paper adds an understanding to both the study of Modern France as well as Modern Middle East Studies on the racialization of “Arab” men in the prison as a function of capitalist crisis.

³¹ Albert Londres, *Au Bagne*, (Seattle: Motifs, 2012) Kindle Edition.

The prison utilized a system of authority that promoted certain prisoners into the hierarchy of the administration as turnkeys and foremen. Popular memory of the prison memoirs implies that turnkeys were remembered as being near universally Arab. “Arabs” in the prison were often deracialized from their actual ethnic group and labeled Arab thus stripping them of privileges they may have had before incarceration. Marine Coquet discovered in their work on the matter that between 20-60% of prisoners sent to the colony were from the Maghreb, though categorized as Arabs regardless of ethnic origin.³² As a disclaimer, this paper recognizes the problematic usage of Arabs, though utilizes it for sake of clarity when discussing the racist memories presented here. In the memoirs discussed, Arab prisoners were universally denied place of origin as part of their identity, unlike their white counterparts.

Turnkeys were often not promoted for behavior, but rather for the function they provided. Coquet suggests that this allowed Arabs to subvert the traditional racial hierarchy of France, forming a separate racialized authority in the prison.³³ The central task of the turnkeys was the supervision of forced labor, administrative assistance, and providing of zones of legal exclusion for trading of clandestine goods. In the context of this study, the function examined is the role of the “Arab” turnkeys and foremen as reinforcers of the manufactured system of racial authority in the prison. The administrators were the empowered class in the hierarchy. Beneath them the guards who then exploited the foremen and turnkeys. Once again at the bottom of the hierarchy were the prisoners without authority

³² Marine Coquet, “Bagnards ‘Arabes’ et Porte-Clefs en Guyane: Naissance et Usages d’un Role Penal et Colonial, (1869-1938)” *L’Annee du Maghreb*, 20. (2019): Pg. 77-92.

³³ Coquet, “Bagnards ‘Arabes’ et Porte Clefs en Guyane.”

who served their time in the prison through hard labor of developing the infrastructure and economy of French Guiana.

The literature on the subject of the French carcerality is overwhelmingly immense, with most derivative of Foucault and his contemporaries' work.³⁴ Despite his influential studies on European carceral systems, Foucault had little to say concerning the penal colony, arguing that penal colonies were simply ways to relieve the socioeconomic stress of detention centers in France proper.³⁵ Foucault understands the penal colony as a function of capitalist crisis, rather than a foundation of it. While this is true of the penal colony, my theoretical intervention suggests that systems of power in the colony are worthy of examining on their own through a look at the racialization of authority in the penal colony. In this sense, the intervention provided here seeks to reframe the position of colonial carcerality in the context of the circuitry of capitalist crisis.

Like Foucault, the work of his contemporaries was deeply Eurocentric in its distant attempts to understand the problematic of the penal colonies.³⁶ This paper attempts to reframe the colonial carceral experience through the experience of racialized Arab bodies in French Guiana. In this sense, I appropriate the method of Foucault while identifying and resolving the blind spots of the Foucauldian tradition.

There have however been significant developments in the study of French colonial carcerality recently; notably in English, Stephen Toth's work on French Guiana and Peter

³⁴ Michel Foucault, *Power/Knowledge: Selected Interviews and Other Writings (1972-1977)*. (New York: Vintage Books, 1977) and Michel Foucault, *Discipline and Punish: The Birth of the Prison*. (New York: Vintage Books, 1978).

³⁵ Foucault, *Discipline and Punish*, 279.

³⁶ See; Michelle Perrot (ed.), *L'Impossible Prison*. (Paris: Editions du Seuil, 1980) and Patricia O'Brien, *The Promise of Punishment*. (Princeton: Princeton University Press, 1982).

Zinoman's work on Vietnamese carcerality.³⁷ Both works are inspired by Foucault's work on prisons but provide significant advances in the study of colonial imprisonment, though Toth's remains more Eurocentric than Zinoman's. There is also Patricia O'Brien's book that follows in this Eurocentric pattern of studying French carcerality but does give more note to the issue of colonial carcerality than others in its brief examination of the export of French prisoners to Algerian prisons, though without challenging Foucault's problematic of crisis and carcerality.³⁸ The recent French literature grapples with race more seriously. Marine Coquet's article deals with the ways that Arab-ness subverted traditional race relations in France when observed in the prison through a quantitative look at the numbers of prisoners deemed "Arab" and turnkeys. Linda Amiri's work on the penal colony reproduces in part the Foucauldian perspective of imprisonment as a function of economic crisis, though emphasizes that the expression of this crisis between 1868-1887 came in the form of dislocation of mostly indigenous Algerians to the penal colony to strengthen the carceral administrative program.³⁹ This paper is not concerned with a quantitative look at the penal colony but a qualitative one focused on the racialization of Arabs in myth and memory of White prisoners to understand the means through which the prison operates as an organ of international capitalism.

There are also precedents for this type of work amongst Middle East historians that set excellent guides and precedent for the type of work I attempt to complete. Timothy

³⁷ Stephen A. Toth, *Beyond Papillon: The French Overseas Penal Colonies, 1854-1952*. (Lincoln: University of Nebraska Press, 2006) and Peter Zinoman, *The Colonial Bastille* (Berkeley and Los Angeles: University of California Press, 2001).

³⁸ O'Brien, *The Promise of Punishment*.

³⁹ Linda Amiri, "Exil Penal et Circulations Forcees dans l'Empire Colonial Francais." in *L'Annee du Maghreb* 20, (2019): 59-76.

Mitchell's work is significant in the precedent he set for understanding the ways that Orientalism is reified on colonial bodies, though so-called colonial subjects might not have viewed themselves as such.⁴⁰ Rather than a macro-study like Mitchell's, this work attempts to examine the reification of myth and memory of Arab bodies in the penal colony of French Guiana.

I first acknowledge that almost all memoirs from the colony came from the perspective of white French men. These writings include often racist depictions of "Arab" bodies in the prison, though they give insight into the processes by which myth and memory of race and authority are imposed by the white administration, and eventually white prisoners. This paper thus examines expressions of capitalist crises through carceral myth and memory. By making use of a series of documents of written memory either from prisoners, administrators, and visitors to the colony, I examine the reproduction of myth and memory from the white gaze onto the racialized Arab body. My goal is not to exhaustively identify the roles and daily life of Arab prisoners in the penal colony, but rather to identify the carceral myth and memory of Arab lives and the consequences of such myth on the systems of power in the prison.

It is not my goal to reproduce the conversations that otherize colonial traumas as the focus of this study.⁴¹ The task of this study is to examine the cycles of generalized capitalist trauma that present themselves in the language of memory and myth in the penal colony. These traumas themselves are primarily consequences of the intersections of capitalist and colonial relationships of the French state. There are first the traumas of colonialism and the

⁴⁰ Timothy Mitchell, *Colonising Egypt*. (Berkeley and Los Angeles: University of California Press, 1991). and Edward Said, *Orientalism*. (New York: Vintage Books, 1979).

⁴¹ Edward Said, *Orientalism*. (New York: Vintage Books, 1979).

violent dislocation of racialized bodies from the Middle East and North Africa to the penal colony. There is then the traumatic imposition of authority onto these bodies to serve the manufactured racial hegemony of the colony. Finally, there is the trauma faced by prisoners repressed by this authority that then takes the form of the myth and memory of experience in the colony and the representations of racialized Arabs in those documents. The memoirs from the white French men in this article help us to understand the ways that carceral trauma allowed for the administration of the prison to impose a racialized system of authority that it uses to justify its continually repression of prisoners. The findings of this chapter conclude that while the penal colony was primarily an expression of capitalist crisis, the economy of power in it was dependent on the racialized systems of authority imposed by the prison administrating class.

Of the extant memories of the colony examined here, Clement Duval's was the earliest. Duval was a French illegalist anarchist condemned to hard labor at the penal colony in 1887 for numerous property crimes related to his reclamation of commodities from the French bourgeoisie. He escaped in 1901, making his way to New York City where with the assistance of another anarchist, Luigi Galleani, he completed this memoir in full form. His account of the carceral system of the penal colony is useful because of his principled ideas of anarchism, and the contradictions with this anarchist philosophy and his relationship with race in the colony. Central to Duval's understanding of the racial construct of the penal colony were carceral myth and memory of racialized Arab men. Duval's description of the racialized systems of authority in the penal colony illuminates the processes of myth and memory primarily through the language he used to describe his experiences of carceral violence.

Duval's memoir depicts the common memory of racialized systems of authority in the colony through description of the colony's turnkeys. He remembers the turnkeys as guards' assistants that completed tasks ranging from the basic opening of doors, cells, and chains to the brutalization, assault, and murder of other prisoners. Duval cites them as being almost all Arabs. Turnkeys were still prisoners, though they had positions of authority imposed on them by the carceral administration. Duval framed the turnkeys as holding positions of authority lateral to the Arab foremen. The turnkeys in part oversaw the daily forced labor of the condemned. Duval understood the turnkeys as those holding power used to enforce the carceral repression of French Guiana, and also as functionaries of the capitalist economy of power present in the carceral space.⁴²

The earliest myth that Duval references was that white Christians were hated by the Arab prisoners of the colony due to colonial conflicts between France and the colonies. It is likely true that these conflicts existed in potential during the colonial period, though the administration certainly abused these potentialities. Duval cites the myth of "bloody battles" each day between the Arab "majority" and white Frenchmen.⁴³ Duval framed this conflict as one that reinforced the existing hierarchies of the penal colony, thus reinforcing the continual repression of anarchists by the prison administration and its functionaries.⁴⁴ Strangely enough, though Duval was an anarchist he still identified with the rest of the white French men, indicative of the pervasiveness of the carceral myth at play. Ostensibly of course, the

⁴² Clement Duval, "Outrage: An Anarchist Memoir of the Prison Colony," trans. Michael Shreve. (Oakland: P.M. Press, 2012), 28-42.

⁴³ Marine Coquet's article verifies that most prisoners at the time of Duval's incarceration were from the Middle East and North Africa, though Duval's assumption that they universally held power over him is challenged in Coquet's piece.

⁴⁴ Duval, 35-36.

19th century European anarchists were opposed to racism, but in practice, this was often not necessarily the case as seen in the frequent racialization and racist stereotyping of “Arabs” in the penal colony by white anarchists. After his initial learning of the myth, Duval engaged in frequent physical conflict with Arab turnkeys and foremen. He referred to Arabs as brutes who frequently beat white men. Duval characterized the Arab foremen and turnkeys through his memory of their physical appearance and authority.⁴⁵

There is then the case of Duval’s memory of his comrade Marquant, a French soldier formerly stationed in North Africa, then a member of Duval’s anarchist prison gang, mostly comprised of anarchists from various French gangs. Duval noted that most administrators in the penal colony were formerly stationed in North Africa, like Marquant, thus they were aware of the potential for what they considered racial conflict between whites and racialized Arabs. The administrators were perceived as having used this existing conflict to their advantage perceived by the anarchists. As a member of Duval’s gang, Marquant was involved in the frequent physical conflicts between Arabs and anarchists. Duval depicts the anarchists as almost always losing their fights with the turnkeys. Duval remembered the racial system of the prison as that of anarchists suffering under the “yoke of the Arabs.”⁴⁶ Duval’s carceral trauma likely exaggerated his memory of and racism towards Arabs, though it is important to note that this relationship occurred by design of the administrators. Duval’s conceptualized relationship with Arabs in the colony reproduced the same systems of power present in the language of the carceral myth, thus serving to reinforce the racialized authority that supported the penal colony. Mark Roseman’s work on trauma illuminates the

⁴⁵ Duval, 35-37.

⁴⁶ Duval, 180-181.

exaggeration and distortion of trauma on memory, possibly illuminating the ways that Duval's trauma from being assaulted by "Arab" turnkeys impacted his perceptions of race in the colony.⁴⁷

The myth presents a kernel of truth, though warped by racialization and carceral trauma. The prison administration did in fact manufacture a racialized hierarchy of punishment by imposing authority onto Arab men. This imposition of racialized authority was achieved in the prison as evidenced by the common memory of such, though it was in fact a continuous process that satisfied the administrative class who used the subsequent racial conflicts to justify further administrative repression of prisoners, especially anarchists.

Nearly half a century after Duval's sentencing when Rene Belbenoit arrived at the penal colony, the carceral myths of race and authority had long been reproducing themselves amongst the convicts, administrators, and their functionaries. Before his incarceration, Belbenoit was a French soldier stationed in Syria during the first World War in the Arab Regiment as Sergeant during the capture of Aleppo.⁴⁸ After arriving at the penal colony, Belbenoit depicted the racialized systems of authority much in the same way as Duval. Belbenoit attempted numerous times to escape from the penal colony, though all unsuccessful and punished with hard labor at a camp for all "incorrigibles." The camp was popular referred to as the "incos" camp, and was subject to much more strict supervision of labor and more violent punishments for attempted escapes. Belbenoit's memoir depicts the incos who work from sunrise to sunset, stripped of all clothes except a hat to cover their face

⁴⁷ Roseman, Mark. "Surviving Memory: Truth and Inaccuracy in Holocaust Testimony." *The Journal of Holocaust Education* 8.1 (1999): 1-20.

⁴⁸ William LaVarre, introduction to *Dry Guillotine: Fifteen Years Among the Living Dead*, (New York: Ishi Press International, 2020), 10.

and a cloth to cover their genitalia. Armed guards and turnkeys were depicted to have escorted prisoners throughout the laboring day, then supervising the workers as they labored in the burning sun. Belbenoit remembered that the rest of the incos referred to the turnkeys as “the running camels” referencing their duty of chasing down and beating any prisoners who tried to escape the labor camp while also denigrating their Middle Eastern or North African heritage. Belbenoit remembered that the turnkeys were armed with machetes and guns, though they frequently utilized only handcuffs and their fists to assault and degrade the condemned. Of course, Belbenoit’s memory of these tasks frames them as ones violently overseen by the Arab turnkeys, rather than focusing on the violence of the guards or administration. This is indicative of the half-century of carceral myth and memory reinforcing the racialized systems of authority that took place before Belbenoit’s arrival.⁴⁹

Belbenoit also depicted violence taking the form of political economy in the colony. The turnkeys of Belbenoit’s memoir are functionaries, yes, but they operate in economic zones of exclusion as the primary vehicles of commodity exchange amongst prisoners, dealing in trading of clothes, tobacco, alcohol, and food. Like Duval, Belbenoit depicts the turnkeys as near-universally Arab. The turnkeys were both the primary enforcers of law in the colony as well as the primary conduit for evading the law through the exchange of clandestine goods. Where the non-authorized *condamnés* (condemned) lacked money to pay turnkeys for commodities, they often would trade the very clothes off their backs, or shoes from their feet for just a few cigarettes or an extra drink of rum. Within the micro-economy

⁴⁹ Rene Belbenoit, *Fifteen Years Among the Living Dead*, (New York: Ishi Press International, 2020), 130-134.

of the penal colony, Arab turnkeys facilitated the few occasions of luxury amongst the *condamnés*.⁵⁰

Carceral memory thus depicts the racialized Arab turnkeys with imposed authority as the primary gear of colonial capitalism in the penal colony. Just as the condemned were subject to the myths of violence and economy in the prison, the penal colony itself was entirely dependent on the systems of carceral myth. As Belbenoit says in the end of his memoir:

Without convicts, the penal colony [sic] would perish ... the civilians are at a loss to know how the town can live if the convicts are taken away. They are the slaves of the colony today. They are its necessity, though evil spirit, and the civilian populace of Guiana is too ignorant to realize that it is this spirit of the condemned, the taint of degeneration, which will perpetually constitute the check and ruin of Cayenne as a city until the day comes when it is blotted out.⁵¹

Since few prisoners ever accumulated enough money to purchase their freedom from the colony after their sentence, all wages were thus spent in the mythical zones of exclusion provided by the Arab turnkeys. Though it is unclear whether or not this is true, the depiction and perception of this in carceral memory is fairly universal, thus the emphasis here is not on whether or not the political economy of the prison was actually that of a *petit-bourgeois* turnkey class, but rather that the perception of it as such served to reinforce and reproduce the carceral myths of race and power.⁵²

Henri Marie Pierre Berryer's unpublished manuscript on his time as an administrator at the colony also reproduces largely the same myths of race and authority of that in the prisoners' memoirs, though there are some stark differences. The manuscript is suspected to

⁵⁰ Belbenoit, 52.

⁵¹ Belbenoit, 226.

⁵² See; Duval, Belbenoit, Berryer, and Londres.

have been completed between 1929 and 1933 after his short seven months of service at the colony in 1929. Most of Berryer's manuscript is likely taken or reproduced in part from notes appropriated from other prisoners, notably Francis Lagrange to whom the illustrations in the manuscript are attributed.⁵³ Berryer's role as an administrator subjects his memory to different causal distortions and understandings of myth than that of Duval and Belbenoit, largely in his perspective as someone empowered in the economy of violence in the penal colony. Berryer was deeply critical of the so-called easy life of the Arab turnkeys, though he perhaps contradictorily referred to their work ethic as fanatical. Despite Berryer's racist memories of the easy life of Arab turnkeys, he often used to refer to white prisoners who had been abused or fallen ill as "arabesque," using the term to describe their thin, bruised, and bloodied flesh. Berryer's position as an administrator perhaps validates the racist views that Marquant suggested the administrators had. By Berryer's own words, he often referred to Arabs as fanatics with "hyena teeth" who abused white men by day and resided in luxury apartments by night.⁵⁴ No other memoir refers to any kind of luxury apartment used by prisoners. Berryer's manuscript presents the perspective as someone of the dominating class in the racialized economy of power of the penal colony, thus his language is largely presented as degrading racism towards Arabs rather than observations of reified myths of violence as in Duval and Belbenoit's work. Berryer's manuscript depicts a racist, though illuminating, perspective of the administration on the idea of becoming "Arab" through incarceration and physical abuse.

⁵³ Marc Renneville, *Berryer: Surveillant au Bagne de Guyane (1931)*, (Criminocorpus Online), URL: <http://journals.openedition.org/criminocorpus/2955>.

⁵⁴ Henri Marie Pierre Berryer, *Sept Mois au Bagne (1931)*, (Paris: Criminocorpus, Philippe Zoummeroff Collection, 2006), 36-56.

Lebanese literary figure Ameen Rihani wrote briefly on the relationship of French prisons to Arab and Lebanese men in *The Prison of Abdulhamid*. The play explores the experience of several Lebanese prisoners who were condemned to continue their sentences in prison by the post-Ottoman government, despite their crimes being against the Ottoman and not French governments. The prisoners damn the nation (*al-Watan*) repeatedly through the play, continuing that “Prisoners will never be members of the [Lebanese] nation.”⁵⁵ The prisoners hold that their only place is in prison, as there can be no place for the criminal within a government. The play suggests that though there is no place for a prisoner within the State, the State depends on the creation of prisoners. The prisoners eventually die, condemned from the Lebanese nation. The nationless-ness that occurs in this Lebanese prison, administered by the French government, very much resembles the dual nature of the racialization of prisoners in French Guiana. While these racialized prisoners were deemed Arab by the French administration, they were simultaneously stripped of their material connections to their nation. The racialized nationalities of the prison, specifically that of the Arab nation, can only be considered carceral national identities. It is in this sense that the racialized authority of the penal colony reproduces itself by stripping prisoners of their nationality, and imposing on them a carceral nationality unique to the colonial carceral experience.

⁵⁵ Ameen Rihani, *Abdulhamid*, (Raleigh: Moise A. Khayrallah Center for Lebanese Diaspora Studies Archive). This document is a play written by Ameen Rihani, and part of a larger work, “Sejil al-Tawba.” Quotes are author’s original translations as the manuscript is in Arabic.

I do not attempt to claim that the work completed here is comprehensive or exhaustive of the immense primary literature on the carceral experience of French Guiana. This article concludes that myth and memory served to reproduce and reinforce its racialized systems of authority. Carceral myth and memory in this context almost universally denied agency, voice, and identity to those actors racialized as Arab within the penal colony, though examining the literature in context illuminates the ways that myth and memory reified the larger colonial relationships of the French state. The work presented is part of a larger project on the subject, thus I have excluded certain conversations present in the sources. The depictions of violence are certainly the point of departure that all other systems are derived from in the context of the penal colony, thus the choice to focus on this image of a larger and ongoing project.

The matter of French colonial carcerality in and from the Middle East and North Africa is in no way exhausted through this study of prison memoirs. There are numerous magazines, journals, and newspapers from the period that reproduce the same myths present in the memoirs and manuscripts presented here, though in varying degrees and in vastly different context. Similarly, the paintings and other art created in the penal colony and in memory of the colony provide much more source material to examine the matter of myth and memory of Arab bodies in the carceral system. Finally, there are extensive literary depictions from the infamous French Guiana penal colony as well as other French carceral systems in the Middle East and North Africa that provide rich depictions and fictionalizations of Arab experiences that would be useful to examine as consequences of carceral myth and memory.

Chapter III

Constructing Theory in the History of the Prison: Machinery, Cybernetics, and Implements of the Penal Colony

Contemporary artificial intelligence (A.I.) traces its roots to the original experiments in cybernetics of the mid-20th century. Today's A.I. depends on pattern-based learning through the use of computerized neural-networks. At its fundamental level, these artificial intelligences seek to model human tasks and behaviors.⁵⁶ We might further consider A.I.'s fundamental form to be the computerized analog of the human mind. The matter remains though that A.I. is essentially a mechanized simulation of human labor. It represents the furthest articulation of the capital relation as embodied in mechanical technology.

As early as the mid-19th century, Ada Lovelace had already theorized, in the tradition of English mechanical philosophy, an analytical engine capable of performing complex dynamic algebraic functions. Lovelace's analytical engine is considered by Margaret Boden to be the earliest formal theory of a machinic artificial intelligence. The device performed complex algebra to compose music, replacing the need for a human composer and instead requiring only musicians to perform the orchestras. Much like artificial intelligence today seeks to emulate and ultimately replace human labor, Lovelace's theoretical inventions sought to replace one aspect of the production process of writing music with a machine.⁵⁷ Lovelace's early experiments reflects precisely the transforming organic composition of capital highlighted in Marx's work. Over time, profitability declines per-commodity on the market due to competition amongst differing spheres of capital. Profitability declines, and

⁵⁶ Margaret Boden, *Artificial Intelligence: A Very Short Introduction*, (Oxford: Oxford University Press, 2018).

⁵⁷ Ibid.

capitalists seek to cut costs further, increasing total productivity, through the use of advanced machinery. At the very core of the capital relation is capital's tendency to replace living labor with the labor of the dead. Commodities capable of producing other commodities become the rule of the day. These capital goods embody the dead labor of the workers who produced these machines. Their labor is alienated from them and embodied in the machine which then rules over the laborers of its time. At each stage of this interconnected history of the capital relation, capital spreads its tendrils further into society. Dead labor weighs heavy on the laborers of the day. Like living dead commanded by the capitalist necromancer, dead labor rules over the living as hulking bodies of steel and gears. The machine represents the fundamental aspects of the capital relation, the tension between dead and living labor. It is no surprise that this direct representation of capitalism produces itself elsewhere in human society. The machine is the basis of capitalist life, and as such, it makes sense that the institutions of capitalist governance operate on the same mechanical principles as the factory floor. Here, we come to the importance of studying specific institutions such as the prison from the perspective of society operating essentially as the capitalist machine.

As it goes, Lovelace's analytical engine was in fact inspired by what Lovelace observed in the inner-workings of the 19th century English industrial factory. Like the gears of commerce turn to produce the commodities consumed daily by the laboring masses, Lovelace's engine utilized these fundamental principles of human and tool to create the first A.I. The history of A.I. and the capital relation develop from a singular point, the capitalist machine. Where there are internalized modes of governance as discovered in Foucault's *Discipline and Punish*, we find modes of autonomy that develop identically to those principles of the machine. Where governance was once accomplished through the public

flaying of criminals such as Damien in Foucault's book, it had been replaced by the machinery of imprisonment. Human labor of the torturers was replaced by the mechanization of modernity. In this sense, the prison clearly can be understood as fundamentally another mechanical system of the capitalist world.

Following in Lovelace's interest in modeling the organization of the industrial factory floor, the early cybernetics movement focused on similar biological organization, but this time with an explicit concern for self-organization and autonomy.⁵⁸ "Feedback" was the central principle of cybernetic thought. Like A.I., systems of feedback, or circular causality, were teleological and purpose-driven "circuits." Cybernetic systems and contemporary A.I. operate on the same principle, by measuring the difference between different points and using this information to guide itself through its next steps. This principle also appears in biological organisms, as they utilize this dynamic decision making to communicate with one another. Machines and organisms both utilize the tensions (contradictions) of differences to make dialectical syntheses of the world in and around them.

The factory floor that was modeled in the first A.I. represents a relationship between man and machine, labor and capital. Labor and capital operate in tension with one another, where labor is certainly dominated and exploited by capital. Is it not too the case then that the machine dominates humans whenever they come into contact? The machine is fundamentally a representation of the domination of human labor by capital. In the prison, we see this domination occur clearly through the application and internalization of carceral discipline. Capital dominates the prisoner through the prison by operating on the same principles of the machine dominating the laborer on the factory floor. Clearly, the prisoner is involved in a

⁵⁸ Margaret Boden, "Cybernetics and A.I.," in *Artificial Intelligence*.

form of labor in the prison. If we consider the whole of the penal colony to operate as a machine, it must be asked what commodity is produced by this machine? First, as our historical background highlighted, one of the stated aims of the prison was to utilize free labor from prisoners to economically develop the infrastructure and productive means of French Guiana. It is clear thus far then that one of the commodities spit out by the carceral machine appears as roads, buildings, farms, and factories built in part by the prison population. But is this all?

The prisoners also engage in the production of power to be expropriated by the state. The institution of imprisonment occurs within the tendency of crises of capitalist production. The economy crashes, laborers are laid off, and the workers are sent to the camps for committing crimes to survive, and so on. The institution of imprisonment allows for capital to extract profit through commodity production through utilizing prisoners as free laborers, but it also extracts *power* through the replacing of the domination of man by man with the domination of man by machine, as represented in the internalization of discipline highlighted in Foucault's infamous example of the panopticon.⁵⁹

The cybernetic apparatus, the governance of man by the machine, appears as the development of the physical manifestation of the machine. Even the simplest machines could be considered cybernetic when used by man. Though these simple machines may be governing in small ways, determining outcomes through a limited set of variables such as on/off switches, it matters that even at the most elementary level there is a level of governance of humanity occurring surrounding every single machine. In these simple cases though, these machines are clearly not apparatuses of *the* government used to dictate the

⁵⁹ Foucault, *Discipline and Punish*.

actions of its subjects. But that possibility remains in the principle. So, it goes that when these technologies of governance are utilized by the state, they fulfill their potential of cybernetic government. It is in these highly developed technologies of government wielded by the state that we can observe the history of the capital relation. In the prison, the history is no more apparent. Capital materializes its will, its purpose-driven decisions, through the commanding of dead labor in the production process and the transformation of this rotting flesh into advanced machinery capable of dominating the living laborers that confront its necromancy on the factory floor. The transformation of dead and living labor into organs of the capitalist system occurs fully and most maturely in the machine.

Once again, is it any surprise that the whole of society comes to reflect the organization of the machine? Society takes on the will of capital through this simulation of the capital relation. It's machinic consciousness, alongside humans, become confined by the limits of the capital relation. The machine operates on a set of limited outcomes. It is built to accomplish any number of goals, but certainly a definite number or range, through a set of predefined inputs by the human. The human communicates with the machine through these inputs, but the communication between man and machine is limited by the possibility of its machinery. Consider the on/off switch: you may turn the switch one of two ways, or in any number of ways between two points, but you may only get a few possible outcomes. The light may be on, it may be off, or it may be somewhere in-between. The light cannot however turn into a car and drive you away. It has a limited set of possible outcomes.

All machines, even A.I., operate on these same restrictions. These restrictions, like the physical walls of a prison cell, are modes of confinement. They confine possible behaviors to more accurately accomplish a set of possible outcomes. The state generally

seeks to punish criminals and separate them from the whole of society. Though this may give the capitalist too much credit, in principle, these actions of the state seek to isolate murderers, rapists, arsonists, and other enemies of the state in a confined space where they cannot interact with or harm the general population. The state employs laws on the premise that it will use these laws to punish criminals. The existence of law presumes the enacting of punishment. Here, we see the limited possibilities of the carceral machine. You can either break the law, or you can obey the law. In the eyes of the prison, these are the only two inputs that matter. If you have been convicted of a crime, you are sent to prison and will serve your sentence confined in its walls. If you have not been convicted, then you will not be sent to prison. Of course, the state is not uniform in its application of these laws. Many prisoners are convicted of crimes they never committed, and many criminals roam the streets of the “free” world.

The carceral machine limits its inputs, but what of its outputs? There are certainly more implements at play in the prison than the simple confinement of prisoners without structure in the enclosed grounds of the prison. The principles of the machine exhibit to us that a limited number of inputs allows for decision-making informed by these inputs. Purely concerning logic here, it would follow that the prison, by the nature of differentiating between convicted criminals and ostensibly free citizens, the order of the prison extends far beyond its enclosed ground. Once criminals are placed in the enclosed territory of the prison, they are subject to the order of the warden, a strictly regimented life meant to minimize the possibility of ‘deviant’ behavior. The thought behind the prison’s administration is that by limiting the behaviors of the prisoners, they can limit the possible *outcomes* of their behavior. Suppose that a prisoner is never allowed out of their cell to interact with other prisoners. It

would be reasonable to say that this prisoner cannot possibly murder another prisoner, though this is of course hypothetical. These forms of predicting situations by limiting behaviors is at the core of prisons' administrative policies. Consider the enforcement of hard labor that occurred in French Guiana. Day-in and day-out, prisoners like Duval and Belbenoit were made to slave away in the fields under the hot sun, constructing buildings, harvesting food and cotton, and so on. This labor was enforced by both non-prisoner guards and administrators, but by deputized prisoners, mostly racialized as "Arab," who enforced this labor under threat of brutal violence or even murder. This brutal overseeing of hard labor represents another regulation of possible outcomes that occurs in the carceral machine. This slave labor is like a gear, pushing forward the stated goal of extracting free labor from prisoners to produce commodities for the state, but also reinforcing the internalized form of governance characteristic of the modern prison. Suppose that every day for some ten or twenty years, you are forced into the fields to labor in the hot sun under threat of death by armed guards and turnkeys. Eventually, the subjects of this domination come to internalize the prison guards. The cop in their head becomes the order of the day, and they no longer consider the possibility of not obeying the police of the mind.

The history of the machine, the physical manifestation of the capital relation, holds the history of the material forces of capitalist production. In the prison, we see the capital relation function as it does in the factory floor. Possibility is limited as life is transformed into a subject of capital. Just as all machines are confined to a set of possible inputs and outputs, the whole of capitalist society functions as a confining force. The prison then appears as the ultimate wedding of capital and power. The confining principles of the prison extend outwards into "free" society.

The Soviet proto-cybernetician Alexander Bogdanov supposed that “all human activities are essentially ... organizational.”⁶⁰ His argument can be extended to say that labor is an organ of a self-organized natural system, so much so that it could be reasonably said that capitalism is entirely natural, though I attach no moral judgement to such a statement. Bogdanov continues, “nature is the first and greatest organizer; and a human being is only one of its organized creations.” As such all actions and reactions of the natural-material world are “governed by organizational laws.” Bogdanov’s proto-cybernetics consists of a framework that asserts that all components of nature are interconnected and relate to one another like a complex organism.

The carceral machine directly employs implements of self-regulation and self-governance to achieve its goals. Driven by the will of capital, the carceral machine self-regulates the on goings of the prison through the implementation of various regiments and policies. In the case of the schedule in the daily order of prisoner life, these schedules allow for more effective governance and commodity production through various implements.

The mechanical behavior of the capital relation validates Marx’s idea that capital maintains a form of equilibrium. In the case of the thermostat, the infamous cybernetic system example, the machine measures the temperature of a room and adjusts its heating or cooling devices accordingly to maintain a single temperature. The thermostat maintains a distinct equilibrium despite various inputs. Suppose the thermostat is set to 30 degrees Celsius, but the *thermometer* of the thermostat reads at 28. The thermostat will trigger a heating implement to heat the room up to its specified equilibrium. The same adjustments

⁶⁰ *Bogdanov’s Tektology*, 1.

will occur to decrease the temperature if it is too warm. The capitalist machine maintains a similar principle as the cybernetic thermostat.

Equilibrium is maintained in a general capitalist system as well. A dollar made by the capitalist is a dollar stolen from the worker, profits made in industry A bring profits lost in other sectors, boom cycles lead to bust cycles, and so on. This principle spreads throughout the entirety of the capitalist order of the day. Commodity production occurs only through this interconnected system of the capitalist economy. The capital relation can be, in this sense, be considered a singular machine with an immeasurably large number of implements and apparatuses all directed towards fulfilling the basis laws and will of capital itself. Capital spreads through the industries that act as implements of the capital relation. Capital transfers wages and revenue between industries of production to maintain its equilibrium. It is for this reason that in order for the capitalist to make a profit, he must employ labor, and as all value is produced by the worker, all equilibrium requires for capital to possess a counterpart in constant tension with itself, that counterpart being the productive classes of society.

Ross Ashby argues that it is the enclosures of a machine that enforce the limited conditions of equilibrium. The enclosures of society maintain an equilibrium of class conflict under capitalism. The establishment of a constant state presumes the existence of differential states or components. Difference exists in the machine insofar as it performs functions that maintain equilibrium.

Ashby finds that while equilibrium may contain difference, the state of equilibrium is unchanging despite its fluctuations within its enclosures. The machine is merely half of the capital relation; humans are the second component. The capitalist machine, as Bogdanov alluded to, systemic. The machinic system consists of hierarchies and apparatuses of the

capital relation. The machine is fixed capital and the commodity. Embodied in it is the history of all hitherto tensions of capitalist production, the entirety of class struggle can be represented by the confrontation of living labor with dead labor in the machine. The history of capitalism is found in its totality in the machine, trapped and obscured by its unchanging enclosures.

The physical enclosures of the prison cell or the walled prison camps of the penal colony are the most apparent examples of Ashby's theorized enclosures in the productive machine that is the prison. The enclosures of the prison are not simply walls and locked cells. The schedule of the day is also a form of confinement. Prisoners and guards alike are *confined* to the on goings of daily labor, activities, and the like, all of which are strictly regiment the behaviors of the prisoners. This regiment places prisoners a predetermined space for a predetermined time, enclosing their possible interactions to only those in such a situation. There are two possibilities here, the prisoner can either accomplish their task or disobey their orders. Their decision is not made out of free will, but it is subject to direct threat of violence and death by their overseers. Suppose the prisoner accomplishes their task, then they have completed the task set out for them by the machine, but the possibility of these tasks not being finished is central to the functioning of this capitalist decision-making. This system of power presumes that at some point, there will be a prisoner who will disobey their tasks, and in return, they will be brutally assaulted or even murdered by the prison's overseer. These two options are enclosed by the imposition of a single situation by the prison's administrators.

Ross Ashby's systemic thinking extends to matters of memory as well. Systems contain something resembling memory, whereby any purpose-driven system might be

understood to possess a memory that can be determined as in simple algebra. Suppose that the memory of a machine has an unknown variable, x . If we know that $x+10=20$, then we can reasonably propose that $X = 10$ as well. Ashby finds that this is a form of memory in cybernetic systems, arguing:

If a determinate system is only partly observable, and thereby becomes (for that observer) not predictable, the observer may be able to restore predictability by taking the system's past history into account, i.e., by assuming the existence within it of some form of "memory."⁶¹

Ashby certainly considers history and memory to be two terms for the same variable, however what differentiates the two is the relationship of the memory-possessing system and the observer. It can be inferred then that the memory of a machine, or of any system, is only present when it can be observed by an individual. Here, the relationship between man and machine becomes clear, so we must revise our initial formula. $X=10$ *if and only if* there is an observer present to transform the *history* of the machine into *memory*. History, like the prison, appears in this relationship as another form of confinement. It confines the possible outcomes of the observed system to memory, and as asserted earlier, memory is subject to constant distortion.

The history of the machine may be present and objective at any given point, but the transformation of history into memory that is communicated from the system to the observer is bound to distort and alter itself depending on the perception of the observer. Here we may wind up with one system with a single variable to be determined, but two observers may come with two completely different answers. Assume that our first observer, *A*, has been joined by a second observer, *B*, to witness the system's history. Observer *A*'s personal

⁶¹ Ashby, *An Introduction to Cybernetics*, 115.

history will of course distort their interpretation of the history of the machine, while observer B's personal history will do the same. The two observers will develop two different statements from each other, clearly holding in their minds two distinct representations of systems. The original system, x , represents itself differently in the mind of each observer. These representations too are part of their own systems. The world is comprised of complex, interconnected, and interweaving systems, so much so that it is entirely reasonable that these systems may have included x originally, but once they are reproduced in the mind of the observer, they become something else entirely; perhaps denoted as system y and system z . There is clearly a condition of difference between the original system and the representative systems in human memory. However, Ashby's principle remains the same. For the historian, our task is to consider these numerous variables, our theses and antitheses of the dialectical process, and restore predictability by taking the history of the world-system into account. History then, is the only suitable field for a fully cybernetic perspective in Ashby's view.

Ashby finds that the existence of memory in a system is "a relation between a system and observer."⁶² Foucault finds in *Discipline and Punish* that the panopticon functions through the internalization of observation. In both cases, these systems are relational, their form determined by their relationship to their surroundings. The memory possessed by such systems is nebulous and constantly in flux, as such memory is not an objective thing but rather a concept invoked by the observer in order to determine a degree of the history of such a system. These histories are reflected in a degree of different realities, each shaped by the systems represented in the individual observer's perspective of the world. Memory does not just distort over time in the mind of the individual, but the very basis of memory is a

⁶² Ashby, *An Introduction to Cybernetics*, 116.

distorted concept. Memory is merely another implement of the mechanical systems of capitalist production, and as such, it is subject to the domination of the capitalist machine at all points.

The memory mechanism plays a profound role in the racialization of authority in the penal colony. The prison operated through a system of racialized authority. Prisoners who were racialized as “Arab” were promoted to positions of authority, though they remained prisoners, to supervise and manage the activities of white prisoners. Clement Duval’s memoir highlights this racialized authority in his memories of abuse and power. Duval claimed to remember incidents of violent conflict between “Arabs” and white French prisoners. The memory of such events, regardless of its factual accuracy, validates Ashby’s proposals that there are in fact degrees of reality. The system being observed here is clearly the racist system of France proper. “Arabs” were a colonized people, systematically (no pun intended) oppressed by the French colonial states. Racial prejudice existed within the history and memory of France and its citizens. When Duval recounts the memory of these supposedly violent conflicts, the *memory* of the system appears in his consciousness. The history of capital and race is embodied in Duval’s memory of racial violence. The system is capital, the machine is its physical manifestation, and race functions as a self-regulating implement of capital’s mechanical interests. All the way down, the prison operates on the same mechanical principles as the confined society ruled by capital.

Clement Duval was an anarchist with a penchant for disobedience; at any moment, he tended to point out and articulate his perception of the illegitimacy of authority above him. His memoir is rife with these critical remarks of the guards, the turnkeys, and at times, towards the entire concept of “Arabs” in the prison. His lifestyle and framework of

anarchism made it so all of his memories were viewed through the lens of power struggles. Where Duval witnessed a guard abusing a prisoner, he saw only power and the state. This extends to his perception of power in the racialized turnkeys of the prison. Ironically, his principles of thought become confining mechanisms, reactive to the domination of man by capital, and his struggle against those in power comes to represent a gear of the carceral machine that reinforces the racialized myths of race in the penal colony. Race and administrative authority acted as implements of the capitalist mechanism in the penal colony. Once prisoners were placed into their initial environments of the prison, their actions were regulated by the racialized implements of capitalist power. Race and racial conflicts characterized the memories of white French prisoners and administrators, so much so that one can identify the reproduction of racism in the French state within the prison itself. The history of racist and colonial policy in France is embodied in the manufactured conflict between races within the penal colony. In the machine, there exists the entire history of the productive forces that led to its existence; in the penal colony, there is the entire history of the capitalist society that produced it, including the racial, civil, and class wars of such societies.

Michel Foucault found that the 19th-20th century disciplinary societies initiated the “organization of vast spaces of enclosure.”⁶³ Gilles Deleuze supposes that the prison is the direct analog of the system that characterized disciplinary society. Here we see the common misapprehension that “society is a prison.” Society is not a prison, and prison is not society, but rather both are capital, and develop alongside the tensions of capitalist and technological

⁶³ Gilles Deleuze, *Postscript on the Societies of Control*, (New York: Anarchist Library, 1990).

means of production. The prison is a material analog for the disciplinary system in Foucault's work.⁶⁴ As such, other institutions come to resemble such an ideal model as the prison; the factory is the notable example. It is no mere coincidence that the first A.I.s were modeled on these carceral imitations.

Disciplinary society developed into a society of enclosure, where the "ideal model" of the capitalist institute appears. The aim of the enclosure was to "concentrate, to distribute in space, to order in time, and to compose a productive force within the dimension of space-time whose effect was [sic] greater than the sum of its components [sic]."⁶⁵ The society of control that developed from the society of discipline transforms the institution into an assemblage of interiors and enclosures. The interior operates in perpetual tension with the enclosure. These tensions are the condition of the institution; the institution is a static apparatus that seeks to order a dynamic population through the resolution of social contradictions. With the development of the society of control, the enclosure repressed the last act of a collapsing system of governance that seeks to reproduce the state endlessly, even on previously disciplined territories and populations.

The enclosure makes use of control mechanisms to accomplish its capital-driven aims. These mechanisms reflect the principles of enclosure and confinement, under direct dictate of capital. In the penal colony, these mechanical implements take a number of forms related to the administrative activity of the enclosure. Clement Duval's racist imagery of the "running camels" threaten the lives of subversives in the fields of labor, and the memory of this control over life and death develops into a secondary mechanical implement of control.

⁶⁴ Ibid.

⁶⁵ Ibid.

Discipline subsumes behavior into the order of capital, but control seeks to homeostasis the disciplined society under the state. Ross Ashby finds that the development of such an order is itself a form of enclosure.⁶⁶ All possible tensions exist within the domain of capital's control over a population, as such, all possible experience and memory in such a society of control such as the penal colony are transformed into mechanisms of internal control that seize the disciplined population and order them according to the principles of the machine.

The protocol of confinement presumes a predictable outcome, just like the factory floor. The transformation of the order of society from that of sovereignty, to disciplinary, to controlled reinforces the argument of this thesis on the prison as a machine. Capitalist governance culminates in the society of the control. Bodies are made into raw materials to be processed in the protocol of capital. The transformation of society into a controlled government imposes a totalizing enclosure of human activity and history. The controlled institution learns from the history embedded in it and operates totally on the logic of capital, that being endlessly increasing productivity.⁶⁷ The history of mechanical governance holds social dynamics that resemble capital's base principles. The competition amongst capitalist pushes inefficient and diverse modes of production to the wayside, much like the elimination of difference over time in Foucault's conception of civil war. The variables of any controlled system diminish over time. Variety declines in the same manner as the dialectical abolition of difference. Such movements lead to a single identifiable state of equilibrium.⁶⁸ The fundamental aim of the society of control is the extermination of difference and the

⁶⁶ Ashby, 132.

⁶⁷ Ashby, 132-134.

⁶⁸ Ashby, 134-136.

totalization of capital and the state. The end of history of the machine, the end of history of capital, is the state.

In the society of control, the logic of capital is embedded in both the enclosure and its control implements. Deleuze highlights this logic in the case of factory salaries. The premise of the factory is an environment with the highest possible productivity and the “lowest possible [pay] in terms of wages.”⁶⁹ The society of control extends this premise to the whole of a population. The factory and its machines are the enclosure, and wages are the modulating control mechanism that fluctuate in order to increase productivity at any possible instance. Machinery, like art, expresses the social conditions that allowed for its development.⁷⁰ Prison is a machine, and the machine is capital, a mechanical effigy of class struggle and history.

Societies of control have significantly different relationships to markets than the ordinary disciplinary society. Deleuze supposes again that the society of control can be considered a singular corporation that relegates production to the periphery, as in the case of labor being exported to the penal colony. Such markets are only concerned with the buying and selling of control. The market dominates a population, using control mechanisms to reproduce the capital relation, transforming the panopticon into the firm. The characteristic market behavior of the society of control is that of financialization, which historically has only been considered to be a phenomenon of the 20th century. “Debt” is the mechanism of control in these markets of controlled society. In the penal colony, such financialization of human relations appears in the clandestine trade of clothes, food, alcohol, and tobacco.

⁶⁹ Deleuze, *Postscript on the Societies of Control*.

⁷⁰ Ibid.

Jackie Wang comes to similar problems with some of Foucault's findings on prisons as the essays in this thesis. She disputes the proposal that capitalism diminishes difference, as in Foucault's discussions on civil war. Instead, what Wang refers to as *carceral capitalism* wields the state to accentuate points of difference, using the prison to reinforce a system of racialized capitalism.⁷¹ Both Wang and I come to a similar but different conclusion. The prison reinforces a system of racialized capitalism, but it does not do this through the simple accentuation or diminishment of tension. Instead, capitalist society and the prison operate on the same mechanical principles. Where there is capital, there will be an institution of confinement and imprisonment. The mechanical principle of capitalist production exhibits the tension between dead and living labor. It is not that society is a prison, or prison is society, but rather that prison and society are both *machines*. The operating of a machine on the factory floor under command of capital is the fundamental relationship of capitalist society. This is why such similarities are found and comparisons made between school, the cubicle, and the prison cell. These are not principally prison-like, they simply function in the same manner as the capitalist machine. The machine requires confinement to produce a singular outcome, and capital requires an institution of imprisonment in order to enact its will.

Angela Davis correctly identifies that the prison reflects the society around it. In the United States, where the state operates in a fundamentally racist and white supremacist manner, the prison and society both racialize crime. For Davis, prison exists as an abstract site that forcibly excludes certain peoples and populations from society. These criminalized bodies are confined in every sense of the word, both inside and outside of the prison grounds.

⁷¹ Jackie Wang, *Carceral Capitalism* (Cambridge: Semiotext[e], 2020)

These so-called criminals are imprisoned for crimes that are symptomatic of the society that produced these ills in the first place. Suppose someone goes to prison for stealing food to survive; is the society that chose for poverty to exist not to blame for such a crime? In this situation, Davis identifies the tensions between prison and society, concluding that the racialized capitalist system that acts through the prison is explanation enough of the racism that thrives in the prison itself.⁷² However, the prison is not an apparatus of society, nor is society an apparatus of the prison. Both prison and society function as implements of the capital relation. Farid ben Rhadi emphasizes this symbiotic relationship of capitalist society in the prison, arguing that “prison only exists to make those on the outside believe they are free.”⁷³ Though prison and society are in constant tension and certainly antithetical to each other, these tensions are derived not from each other but from the fundamental principles of capitalist production and the machine.

When considering the prison as a site of commodity production, it is historically apparent that the prison certainly produces a number of commodities at the will of capital. First, the prison succeeds in producing confinement. The state criminalizes actions in order to isolate those deviants from legal society into situations where they cannot disrupt the ongoings of the capitalist world outside the prison walls. In this sense, prison succeeds in the confinement of individuals and it certainly has for the past several centuries, least of all in French Guiana. If one of the fundamental aims of prison is to increase the productivity of capital, it accomplishes this without question. Criminals are no longer allowed to act in public as detriments to society, they are placed in authoritative environments and deprived of

⁷² Angela Davis, *Are Prisons Obsolete?* (New York: Seven Stories Press, 2003), 16. Cited in Jacques Lesage de la Haye, *The Abolition of Prison*, (Oakland: AK Press, 2021), 1-8.

⁷³ De la Haye, 14. Ben Rhadi is a host of “Ras les Mors” on Radio Libertaire, 89.4

any sense of autonomy so that they may be set about on tasks that allow for the better predictability and equilibrium of capitalist society. The prison certainly increases the productivity of capitalist society, but it does so in a morally reprehensible manner characteristic of the historical cruelty that it has enacted in pursuit of its aim.

The anarchist-turned-Bolshevik and confidant of Lenin and Trotsky themselves, Victor Serge emphasizes that “prison is made to kill.”⁷⁴ It is an institution that seeks to confine a population, a source of labor, from the whole of society and convert them into bodies subservient to the capitalist machine. They become predictable cogs of a machine, where each action they take can only serve to reinforce the order of their daily oppression. When the prisoners riot, they give the state justification to repress them the next day. When the prisoners obey the rules, they are forced into subservient situations where they accomplish directly the will of capital. There is no situation that a prisoner can find themselves in that does not take part in the production of profit for capital’s sake. Serge continues, “modern prisons are imperfectible, since they are [already] perfect.”⁷⁵ The prison is confinement in its totality. In the prison, all bodies are forced to live according to the rule of the prison mechanism, they function solely as a free source of labor to be used in the production process, whether they are engaged in typical commodity production such as in the fields of agriculture, or the production of power as fuel for the system that organizes them. Serge emphasizes this transformation of living people into puppets of capital’s domination in the prison walls: “There is nothing left but to destroy them [the prisoners].”⁷⁶ Serge is correct, in the prison, all there is left to do is serve capital then die. Even in the prisoners’

⁷⁴ Haye, 11.

⁷⁵ Haye, 11.

⁷⁶ Haye, 11.

death, their labor is embodied in the prison machine. Their labor, reanimated in death by capital, lords over the prisoners of another day.

Conclusion

God is dead, but capital has taken his place. Unlike Abraham's God, capital is very much real and a force of the natural world. Capital takes its material form in the machine, whose metallic appendages relentlessly infect humans like a virus.⁷⁷ Capital constitutes its mechanical divinity in all modes of life under its dominion. The capital virus is intelligent, capable of dynamic and purpose-driven decision-making processes.

This thesis sought to emphasize the relationship between classical cybernetics and Marxist theory. More importantly, cybernetics is used as a way to understand the mechanization of capitalist relationships in the penal colony. Though this thesis forwards its arguments through theoretical exploration and a case study of the penal colony in French Guiana, it does so in a way that seeks to highlight the universal tendencies and laws of capitalist production. The human relationships surrounding machinery are central to the theoretical and historical findings of this thesis. Previous scholarship has alluded to the prison being reflective of society, or society reflecting the prison structure, but this thesis finds that the foundation of both these social and carceral systems is the capital relation, the relationship between man and machine. In production, labor confronts capital in the machinery of the factory floor. Prison and society are no different. Capital spreads its tendrils throughout the whole of society to dominate human labor in the same way it behaves on the factory floor. So, it is insufficient to say that the factory is a prison, or a prison is a factory. No, the factory is a factory, and the prison is a prison, but both operate on the same

⁷⁷ Should it be any surprise then that capital, who operates like a virus in the machine, allowed for the pandemic to spread so violently through the subjects of capital?

mechanical principles that force capital and labor to confront one another in the absolute tension of the capital relation.

Crisis is embedded in simple commodity production at all levels. The commodity's life cycle takes it out of the factory floor, into the market, and eventually consumed. This thesis emphasizes that the factory floor and the prison share a common mode of production. The mechanical principle of the capital relationship expresses itself in the penal colony through the racialization of prisoners, the criminalization of simple trade of clothes, food, tobacco, and the like. Race functions as a regulating mechanism of the tensions of capitalist production. Whereas capital and labor present themselves in immediate tension with one another, as a means of repressing these tensions, certain forms of labor are racialized and used to create conflict amongst the working-class themselves. This is simultaneously a form of civil war, the repression of difference, as well as an expression of class war whereby workers are put into constant conflict with the prison administration and their authorized turnkeys and supervisors.

Crisis occurs in the production process as an expression of the logic of capital. Less profitable production spheres are pushed out of the market through crisis, and the more profitable/productive spheres subsume the empty space left in the market in their wake. Crisis, and the competition between spheres of capital, is central to the production process and a necessary part of the economic growth of any specific territory, population, and government. The penal colony then represents a crisis of carceral production. The class conflict embedded in this conflict appears as racialized forms of power struggles and criminalization of trade amongst prisoners outside of the authorized markets of the penal colony. The penal colony is certainly a crisis of capital, but embedded in this crisis are many

other crises between prisoners and administration, prisoners and prisoners, and capital and capital. The most appropriate manifestation of such crisis appears in the mechanical principle of capitalist production. The history of the penal colony is the history of a machine.

Further research is warranted in specific aspects of this work. With the use of modern analog computing, sophisticated models can be developed to further highlight the intricacies of colonial imprisonment and linguistic limits of philosophy and historiography on prisons. Bernd Ullman's analog designs can be used to this end to develop analog artificial intelligence models of prisons and political economy to extrapolate further quantitative data on the subject matter.⁷⁸ This is the next step for my dissertation at the University of California, San Diego once I start in the program in Fall '22. More typical of historical work, the next steps for this project will involve further archival investigations that were not possible during the pandemic. Through coincidence of circumstances surrounding the pandemic, the research methods and theoretical framework of this thesis reflect the increased relationship between historians and computers. With the aid of computational and cybernetic theory, this thesis was able to become a cohesive project with findings on Marxist theory and the history of prisons, capitalism, and mechanical thought.

⁷⁸ Bernd Ullman, *Analog Computer Programming*, as well as Ullman's original computer designs the EM-1 and THAT analog computers.

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Vita

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