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Epochs of Ecology: The Transition from Feudalism to Capitalism

A Thesis

Presented to

the Faculty of the College of Arts, Humanities & Social Sciences

University of Denver

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Jacob Alexander Tucker

June 2020

Advisor: Chiara Piovani

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Abstract

The transition from feudalism to capitalism has undoubtedly been one of the most fruitful and complicated debates amongst economic historians in the 20th and 21st centuries. With the advent of global ecological collapse, there is a necessity to examine and theorize the movement from feudalism to capitalism through the lens of ecology. While in mainstream economics the environment is either entirely dismissed or nature's role in economics remains subsidiary to the human economy, in the field of Marxian economics, human's interacting through nature is at the core of the entire theory. For that reason, this thesis takes earnestly Marx's contributions to ecology, while also utilizing a broadly Marxian approach to grasp the social and natural dynamic forces involved in the transition from feudalism to capitalism in England from the 14th to the 19th century. This thesis historically examines the dissolution of the feudal mode and the rise of the capitalist mode by highlighting three socio-natural relationships vital for the transition: the relationship to agriculture, wool and textile production, and mining. By exploring these relationships historically through the lens of economics and ecology, we will characterize most aptly the rupture in ecology brought about by the capitalist mode.

Acknowledgements

Oddly, the most difficult things to express are often those feelings which you hold nearest to you; the ones which tend to be the most inexpressible, and for that reason, this page may be the single hardest to write in the entirety of this thesis.

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To Dr. Piovani, besides the tremendous work we have spent together on this project, I am indebted to the care you have shown to me through this all. Few know the struggles I have faced over the last two years, and through all of it, you have shown me a motherly affection that is a refuge in my darkest moments.

Most importantly, I dedicate this project to my mom. You never broke my spirit. You have inspired me to dream and to love all that is worldly. For that, I dedicate this project to you in hopes that my words can reawakening our sense of love for the beautiful things in life once more.

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Chapter 1: Introduction

We live in an age where jettison from our planet to colonize other worlds appears more realistic for our survival than transforming the economic system. How did we come to this? There are many answers, but the dominant answer amongst critical intellectuals today—capitalism. This answer may not be wrong, but it lacks the nuanced perspective necessary to fully critique what must be examined. Simply throwing words at a system does not help us to critically understand its nature. Instead, this thesis analyzes the structures and patterns of the capitalist mode of production, but we must start by laying to rest a few common misconceptions. Capitalism is not something inherent within us, a force outside of us, a law of the universe, or some omnipotent god-like entity. Capitalism is produced and iterated by humans through nature. *It is not only something that humans do to nature but is something that humans have developed through nature.* Humans and nature, therefore, have been, and constantly are, fundamentally intertwined in the development of history. The soil nutrients that the Earth has produced over billions of years are as much a part of capitalism's structure as the labourer and the capitalist. Therefore, we must ask a historically specific question that examines broad structural

conditions that allow for historical change. The fundamental question being asked is of a two-fold character; what specifically happened throughout England between the years 1400 and 1800 to dissolve feudalism and produce capitalism, and what are the structural features of these new socio-economic relations with nature?

Being on the precipice of global ecological collapse, this question appears more pertinent than ever. The ten warmest years recorded in human history have all occurred within the last twenty-one years, and these years are projected to be surpassed by continued warmth in the next two decades (Lindsey & Dahlman, 2019). With planetary warming exponentially increasing since the 1970's we have seen the overwhelming destabilization of terrestrial and marine ecosystems. According to the UN (2019), almost seventy-five percent of the terrestrial environment and sixty-six percent of marine environments have been severely altered by human activity. This is not simply the result of fossil fuels, because it is also the continuous expansion into areas for extraction of natural resources, the homogeneity produced by industrial farming, and the wide use of extremely dangerous insecticides and pesticides. Nearly a million species are threatened within extinction and yet the economic system continues its patterns. Even with around 250,000 additional human deaths per year between 2030 and 2050 being estimated because of climate collapse, the capitalist system still maintains similar levels of production, consumption, and destruction (World Health Organization, 2018). Of the nine planetary boundaries set forth by the Stockholm Resilience Centre with only seven designated with clear thresholds, three of these processes are on the verge of tipping points, and the other four signify the beginnings of irreversible environmental

ruin (Foster, Clark & York, 2010).¹ We are undermining the conditions for our own existence, but it must be asked whether or not this story of ecological destruction is as new as we imagine.

Over the course of human civilization, we have not been stewards of the Earth in the way we tend to envision the pre-industrial world. We must pull back the rosy-colored glasses. Global biomass over the course of human civilization has been reduced to nearly half its original numbers (Bar-On, Phillips & Milo 2018). The number of trees on this planet has been reduced by over three trillion since at least 6000 B.C.E (Henry B. Glick et al., 2016). Humans have played key roles in the movement of dangerous bacteria, invasive species, and have significantly contributed to the general destruction of metastable ecosystems. We have fundamentally altered the landscape of the planet in many different ways, but not all of which have led to the global climate crisis. The phenomenon of global climate collapse is the result of a new form of socio-natural relations. Now, it must be recognized that all organisms on this planet alter and modify their environment to reproduce themselves. At times they may undermine their conditions and at other times create new potentialities through their interaction with the external environment. For all organisms, these relations to their environment are in a state of perpetual flux, yet the relation that we are currently taking with our environment is one that fundamentally undermines our conditions, and it cannot continue in this manner if we hope to survive. The inability to continue in this present manner stems from

¹ Of the seven recognized boundaries that are clearly recognized, climate change, biosphere integrity, land-system change, and biogeochemical flows have all been surpassed. It seems entirely redundant to reiterate that any economic system that produces wealth at the expense of undermining its conditions cannot be thought of as ecologically stable.

something within the economic system that iterates an ecologically antagonistic pattern with nature. The set of socio-natural relations that are now dominant undermine the conditions for the reproduction of both humans and nature in a manner suitable for vitality. Humans are not alone in experiencing the effects of capitalism. Nature has also undergone capitalization with human society. Just as the proletariat feels the pangs of hunger and strain of sixteen-hour days upon the body, so does the Earth feel the draining of its vitality for reproduction.

We may want to imagine the process of climate change as abrupt and unique to the 20th and 21st century, but the history of ecological destruction is quite extensive. We cannot point to the industrial revolution as the only phenomenon in human history in which we as a species have destroyed our possibilities for continued survival. Nor can we claim that neoliberalism is the only ecologically global destructive force that humans have ever seen. While it undoubtedly iterates the capitalist pattern faster than any system seen before it, it is not some radically different economic mode. Claiming that the issues within capitalism are simply related to industrialism, rapid urbanization, or even the increased destructive force of fossil fuels, misconstrues the nature of the capitalist mode (Hobsbawm, 1969, Dobb, 1947, Sweezy, 1950, Angus, 2016). These are simply appendages to the complex set of socio-natural relationships that we call capitalism. When capitalism was born in the English countryside, it did not necessitate the coal-burning steam engine, nor did it require extensive global trade in order to reproduce itself (Marx, 1973). These simply aided the capitalist mode in its development. Yet, the earliest accounts of industrial farming bring to light the inherently antagonistic relation being

iterated by humans through nature. Capitalism may use fossil fuels, but as a system, it is not fossil fuels. It may grow through neoliberalism, but it is not simply the ideology of neoliberalism. It is both forces of production, being human and natural, as well as a complex set of socio-natural relations, and it is through the analysis of those relations that we may come to grasp what it is within the capitalist mode that is fundamentally ecologically undermining.

A few points of distinction must be made to explain the approach of this thesis and how it integrates ideas of ecology, heterodox economics, and philosophy. Within the discourse amongst mainstream economic thought are the conceptions of ‘Green Capitalism’ or ‘Eco-Capitalism’. At the heart of this perspective is a notion that the economic system must realign itself to include notions of both profit and environmental conservation. Before the list of solutions can be put forth, a general theoretical apparatus underlying this entire approach needs to be illustrated. Internal to the mainstream perspective is the notion that given clear property rights, and the proper incentive structure, it is possible to achieve environmental sustainability. This view is what underlies all free-market environmentalism since the 1980s. If these solutions fail to achieve sustainability, the claim is made that it is due to improper financial incentives, government intervention, or the lack of exclusive property rights being ensured (Solow, 1991). Based on Solow’s weak sustainability hypothesis, natural capital and socially produced capital are entirely fungible. At its essence, this hypothesis claims that humans can always produce what nature itself produces. Human produced resources are perfectly interchangeable with natural processes. Emerging from this approach comes a shortlist of

solutions. The field of mainstream environmental economics puts forth several different answers, some of which seek to solve economic issues from a structural as well as an individual utility-based standpoint. When analyzing the structural solutions, the first and most apparent is the extension of markets to capture the cost of production and consumption. In traditional economic theory, prices represent the marginal cost of the product, therefore, the market price accurately describes the worth of the commodity (Anderson & Leal, 1997). Based on this perspective, if the market properly captured costs, then the production of externalities would no longer be produced, in effect, ensuring that production and consumption run smoothly without environmental degradation. Property rights, markets, and technological innovation are all woven together in the mainstream approach to produce environmentally efficient market transactions. The ‘Eco-capitalist’s dream is to one day develop technology which would properly capture its own produced ‘externalities’ to then sell their waste to consumers. The advocates of this mainstream environmentalism have no issue with the economic mode, instead, they seek reform of the economic system as the means of sustainability. For this reason, these advocates tend to see renewable energy as the solution to capitalism’s problems, and oil simply as the new enemy of history (Brown, 2015). In this viewpoint, capitalism can produce eco-friendly technology while continuing to extract surplus-value.

Another aspect of this same approach is the tendency to think of nature’s complex processes simply as ‘natural capital’. It is this ‘natural capital’ that mainstream environmental economics thinks must be fully integrated into the economic value system.

The purpose of this capitalization of nature is to ultimately increase nature's efficiency, productivity, and general profitability, and is centered around a proper valuation of nature itself (Hawken, Lovins & Lovins, 1999). The two most dominant means of valuation in this approach are revealed preferences (Chatain & Mindruta, 2017) and stated preferences (Alberini & Longo, 2006), both of which seek to integrate natural systems fully into the market structure.

In this same line of argumentation is the desire for utility-based solutions. Being that market prices are assumed to properly capture the subjective value of commodities, it is assumed that if human society values ecosystem services, then they will pay the proper amount to ensure their continued existence. Consumer choice and anti-consumerist alternatives are put forth as the solutions to 'saving the environment' because it is assumed that behavior is the issue rather than the structure of the system. Eco-capitalism takes many forms and, underlying much of the thought driving it forward, is the desire to fully commodify nature to ensure efficiency and sustainability (Prothero & Fitchett, 2000).

While to mainstream environmental economists, these appear as viable economic solutions to global climate collapse, to anyone studying natural systems, this would seem to be a backwards orientation. Nature is the condition for the existence of economies; therefore, if specific economic actions have produced the issue, then it is doubtful that intensifying those actions will produce qualitatively different results. There are many issues with bourgeois economics, but there are specifically two theoretical points that are taken as given in mainstream economics that are fundamentally antagonistic to nature's

processes. First, nature is not a thing, it is a process. It is constantly undergoing transformations, modifications, and mutations, whether it involves humans or not. That simply means that we can imagine that nature is a commodity and interact as though it emerged independently of its conditions, and more fundamentally that it is atomistic by nature, but as physical matter, it is endlessly in flux. Nature flows regardless of the exclusive property lines that you place on it. Nature does not follow the ‘economic laws’ that humans imagine exist independently of themselves. Both nature and humanity never exist in isolation or separate from all other things, and for that reason, the bourgeois line of thought culminating in commodity production is deeply antagonistic to natural processes that are always intertwined together. Second, ‘Green Capitalism’ presupposes that capitalism as a system is not contradictory. It assumes that conceptions of profit and commodification are fully compatible with notions of biodiversity and ecosystem resilience, while also assuming that capitalism’s need to extract surplus-value can be made compatible with environmental sustainability. ‘Green Capitalism’ is itself a contradictory concept, because it does not align with the two most basic principles of natural systems—reproduction and diversity. Capital, as a social system seeks to homogenize both production and nature, by bringing it under the sway of a single simplifying body (Marx, 1988). If we understand capitalism as a system in which continuous growth is necessary for the life of the capitalists, then the Earth as a limited terrestrial body is not compatible with capitalism. Mainstream economics has sought solutions to global climate collapse through the extension of markets to nature, rather than altering the nature of the economic system. They have, in a way, imagined

capitalism as more real and necessary for human survival than nature. It should be clear at this point, that a new method is necessary to overcome these theoretical and methodological shortcomings.

To understand specifically where the antagonisms between the human economy and nature emerged, we must examine the emergence of the capitalist mode itself. As we see the growing inability of the Earth to reproduce its conditions for life, we must ask what it is about capitalism that is so different from previous economic modes. How is it that we can ecologically characterize the transition from the feudal to the capitalist epoch? This thesis takes the approach that it is only through examining the specific ways in which humans have produced themselves through nature that one could understand the eco-social nature of capitalism. Marxist and non-Marxist scholars alike have sought to analyze the transition from feudalism to capitalism through the lens of social history, and while new ecologically grounded scholarship has begun to bubble to the surface of discourse, there is still much work to be done (Bookchin, 2007, Foster, 2000, Foster & Burkett, 2016, Moore, 2015). While it is understood that the overall mode of production transformed in the transition, an examination of the specific ecologically grounded relations that drove the emergence of the capitalist mode has failed to be fully explored. This analysis requires an ecologically and economically critical historical approach, which this thesis is seeking to apply.

A developmental question such as this necessitates a developmental answer. The present state of the Earth is a long historical process that is intimately attached to human action in the form of specific modes of production. These patterns of human activity that

have undermined specific conditions of planetary vitality are not isolated moments of destruction. Instead, they should be thought of as epochs, or periods differentiating themselves within the development of human society and their working out through nature (Moore, 2015). An epoch is simply an extended historical iteration of certain performative actions by peoples and by nature. Generally, what characterizes a new epoch is a qualitative rupture with the patterns of the past. It is these ruptures that must be understood if we are to trace the lineage of capitalism back to its earliest ecological roots. Now we must ask, if this is to be an examination of history that seeks specificity, then where geographically do we begin our analysis?

This inquiry takes England as its geographical point of examination. As the longest sustained case of feudalism transforming into capitalism, it provides this examination with a spatially limiting inquiry, while also affording us the opportunity to excavate previous historical formations. Just as geographical specificity is vital, so is a temporal limitation. Capitalism has its roots as much in the emergence of money as it does in the cultivation of wheat in ancient Mesopotamia, but none of these things on their own produce capitalism. Generally, the end of the eighteenth century is taken as the inception point of industrial capitalism, and while this thesis also recognizes that historical moment as the birth of the capitalist mode, this approach often fails to take into account the pre-conditions of industrial capitalism itself. For that reason, a much older history must be considered. Under examination is the period from the 14th century to the early 19th century, beginning first with the earliest seeds of feudalism's dissolution at the end of the 14th century, and ending with the emergence of a newly born capitalist mode

in the English countryside at the beginning of the 19th century. All of history obviously cannot be examined, therefore, we must distill history into manageable threads that note the continuities and ruptures with the past. Specific socio-natural relations associated most strongly with the transformation from feudalism to capitalism will be chosen. In this thesis, those three threads will come in the form of the interaction with the land—agriculture, the pasture—wool and its relation to textile production, and mineral deposits—mining.

Agriculture, since the rise of complex social arrangements, is the base on which all human reproduction rests. Before we can speak of nation-states, empires, or even industrialism, we must first explain how enough energy, in the form of food, is produced to sustain the performative actions needed to maintain those complex systems. It is in the history of English feudal agriculture that we find the seeds of what later became industrial agriculture. In order to understand how we find a mass of free wage-labourers, whose only means of reproduction made them entirely dependent on the market, we must look at the historical ruptures that caused this in the English countryside. The relation with the woodland is in many ways equally as old as the agricultural relation in England. This is a product of the vital role the woodland played in English development, but specifically in the transition, the role that the woodland played as an area of constant expansion for agriculture and later mining. The woodland, pasture, and crop field may be thought of as different from one another, but their histories are intimately intertwined. The final relationship being examined is peculiar for many reasons. While interaction with the land, in the forms of growing crops, animal husbandry, and the reclaiming of

land, are all far older than feudalism itself, mining in the modern sense, is unique to the demise of feudalism and the emergence of capitalism. It marks a qualitatively different interaction with the Earth than had previously been seen. While mining had emerged in antiquity, its role was never vital to the production of wealth in the same sense as it was in the English case. One may not be convinced at this point of the importance of these relations, yet it is the purpose of this thesis to convince the reader of the absolute vitalness of these three relations to understanding the transition from feudalism to capitalism.

The mainstream approach to environmental analysis claims that humans are inherently ecologically destructive and that the issue is individual behavior. While it is true that we must transform ourselves to move beyond capitalism, this atomizing of humans embedded within broader systems does not grant us an understanding of certain key mechanisms. A system is a complex set of relations and moving parts, so without providing the historically specific reasons as to why it undermines its conditions, the inquiry remains rather useless. That is why the three specific conditionalities are so vital to understanding the transition from feudalism to capitalism. They grant us the opportunity to separate threads of history that are the most eco-socially significant points, yet they are all intimately connected in the web of a dynamic historical transition. Working through each one of these ecologically grounded threads will bring us to a point in which we can characterize the historical transformations that occurred through a dynamic eco-social lens.

This work is not simply an inquiry into environmental history, nor is it simply economics. It is truly the critical intersection between the two disciplines. Global ecological collapse is an issue with many intersections, ranging from issues of biology, architecture, technology, sociology, and even philosophy. Therefore, the method for understanding the movement of history must be adept to deal with the material transformations that dictate the patterns of both society and nature. This will be the subject of the second chapter, which investigates the debates surrounding this conversation, along with a methodological discussion. The purpose of chapter 2 is to clarify the theoretical approach that this thesis is taking, while also justifying the use of Marxian thought as opposed to mainstream economic thought.

The focus of chapter three to five is to historically examine the relations to the Earth concerning agriculture, sheepherding and textile production, and subterranean mining. While the chapters are developed linearly, they should be thought of as codeveloping processes, rather than disconnected moments in English history.

Chapter 3 examines the first of the three historical relations to the Earth (agriculture). This chapter examines the historical development in the English countryside leading to the complete dispossession of the peasantry. By illuminating the relations of production (socially driven) and the forces of production (socio-naturally driven), the analysis will uncover the antagonistic relationship at the heart of feudal agriculture. Once this relationship is carefully examined, our investigation of the feudal response to this crisis begins.

Chapter 4 studies the complex relationship between wool and textile production (shepherding and trade). No natural system can be thought in complete isolation, but the human-constructed practice of textile production in England has always had an intimate relationship with pasturage. Once historically contextualized, the expansionary tendency of late feudalism is to be tied to both the countryside and the city. While feudalism as a mode of production did not tend towards necessary expansion, the desire for new land that emerged with the onset of new environmental and social changes drove feudalism to seek solutions to its problems with both intensification and expansion. Neither of which resolved the contradictions. Unlike expansion under capitalism, feudalism's expansion was not fundamental to its mode of production but instead emerged out of new pressures and opportunities arising from social and ecological conditions. The drivers for this expansionary tendency illustrate the two specific roles that both wool and textile production played in the destruction of the English landscape.

Chapter 5 begins by confronting the alien character of the mine in English history. The destabilizing and extractive nature of the mine will be examined in relation to a specific form of expansion: capitalist expansion (subterranean mining). The goal of this analysis is to articulate the nature of the mine and its role as the driver of capitalist expansion, but also to illustrate the way in which the mine represents the embodiment of abstraction, i.e. value.

Chapter 6 summarizes the epochal transformations that produced the emergence of industrial capitalism in the late 18th century. At this point, it will be clear that the emergence of the capitalist mode of production was not necessary, or expected, but rather

was a historical contingency that emerged from a specific set of conditions produced from the ashes of the feudal mode. The thesis concludes with a brief discussion of Eco-Communism as an alternative and an outgrowth from the capitalist mode of production.

The conclusion emerging from this historical inquiry is that, although agriculture and production centering around wool undoubtedly created necessary preconditions for the emergence of the capitalist mode, it was the advent of the subterranean mine that gave birth to the capitalist epoch. The mine as a structure not only brought together 'free' labour, capital, instruments of production, and a means of circulating these raw materials, but as a material structure, it cultivated ideas of abstraction which are necessary for a system that survives on value; a substance of a purely abstract nature. This historical inquiry unearths the fundamental ecological foundations for the creation of capitalist value.

Chapter 2: Dialectical Historicity

2.1. Introductory Remarks

The question pertaining to the transition from feudalism to capitalism has emerged as one of the foremost questions of economic history in the 20th and 21st centuries. However, without a historically driven understanding of the development of capitalism, there seems to be a tendency to imagine previous orders as imbued with capitalist characteristics, and if we hope to properly historicize capitalism, then we must avoid imagining the past as the present. If grasping history is what is the ambition, then we must first ask when the question of the transition from feudalism to capitalism began. Certain historians point to the debate that ensued between Maurice Dobb (1947) and Paul Sweezy (1976)² as the inception point of the general formulation of the transition question, but aspects of this debate go as far back as Adam Smith's (1776) *An Inquiry into the Nature and Causes of the Wealth of Nations* and became of utmost importance to the later work of Karl Marx. Regardless of the origin of the debate, an immense amount

² The transition debate emerged as a historical argument amongst Marxist historians who were seeking to understand how the capitalist mode of production developed from non-capitalist conditions. The driving force of this argument was to properly historicize capitalism as a set of historically conditioned relationships, rather than simply assuming that capitalism was a structure of modern society itself.

of historical scholarship has been done seeking to clarify numerous points of contention. While some of this scholarship is valuable, not all of what has been said allows us to understand the movement from feudalism to capitalism.

Over-generalization, all too often, is applied to historical phenomena which tend to invert a proper analysis of history. This general approach does allow for one to grasp the continuities of history yet overlooks the ruptures that brought us to the present. Considering this thesis is seeking to understand those ruptures, specific classifications are preferred over general classifications. With that in mind, the various points of contention will be put forth, including specific classifications that will be used moving forward.

2.2 Contextualizing the Transition Debate

The first major point of contention amongst economic historians concerning the transition from feudalism to capitalism is a question of classification. In its most basic formulation, the first question that must be asked, is what is meant by the term ‘capitalism’? It is this point that clear differentiation amongst schools of economic thought become apparent. The Marxist becomes distinguished from the non-Marxist, and the implications of the definition only further divide those following the path of Marx’s thought. If we begin our inquiry by defining capitalism as an economic system that sells products on a market, then capitalism has essentially existed for a tremendous amount of human history. This would make capitalism synonymous with commercialism³ and

³ Commercialism is understood as the desire for profit-making, which existed in the feudal order, but could not transform the economic mode of production. Capitalism is not simply an orientation to profit-

would make an inquiry into a transition from feudalism into capitalism one of quantitative intensification and not qualitative change (Wood, 1999). This thesis rejects this notion and instead takes capitalism to be a specific historical epoch that constitutes a rupture with the feudal order (Wood, 1999). Commercialism is not capitalism, just as feudalism is not simply monarchy. Capitalism is constituted by a set of unique socio-natural relations⁴, specific laws of motion⁵ and a capitalist logic or ideology⁶ that all emerged from specific non-capitalist arrangements. The implication of accepting this specific rather than general premise emphasizes that capitalism is not simply the dissolution of feudalism, but instead represents something that emerged. One cannot simply apply a solvent to the structure of feudal society and reach the capitalist mode of production (Brenner, 1982). As Ellen Meiskins Wood (1999) stated in *The Origin of Capitalism: A Longer View*, the emergence of capitalism “required not a simple extension or expansion of barter and exchange but a complete transformation in the most basic human relations and practices, a rupture in age-old patterns of human interaction with

making; it is a complex system dependent upon much more than a simple desire for an increased surplus but is specifically the desire for surplus-value.

⁴ The conception of socio-natural relations developed from Jason Moore’s (2015) notion of the *oikeios* as “a way of naming the creative, historical, and dialectical relation between, and also always within, human and extra-human natures...Nature-as-*oikeios* is, then, not offered as an additional factor, to be placed alongside culture or society or economy. Nature, instead, becomes the matrix within which human activity unfolds, and the field upon which historical agency operates” (p. 35-36). This social and nature matrix is how this thesis is using the term, socio-natural relations.

⁵ There is no single capitalist law of motion, but rather many that constitute the performative movements necessary for the capitalist mode to iterate itself. Nevertheless, given Marx’s understanding of capital, the capitalist mode is the perpetually expanding motion seen in the process of valorization (Marx 1977).

⁶ Capitalist logic is the rationale that drives the tendencies within the capitalist mode, but differs in the motion of capitalist production, in the sense that it is the principle or groundwork on which capitalist accumulation repeats.

nature” (p. 95). It is the relations and material practices that are at the heart of historical change. There are two movements of history in this notion. The dissolution of feudalism, and then the emergence of capitalism. If we simply assume that the dissolution of feudalism necessarily leads to the development of capitalism, then we have naturalized what is by nature historical.

Capitalism, in this thesis, is to be understood as something that has three defining characteristics. The first characteristic is that as a system it requires purely economic coercion, as opposed to extra-economic coercion⁷, to appropriate surplus-value. Capitalism, as opposed to feudalism or the ancient mode of production; which was dependent upon slavery, is fundamentally different in its necessary separation of the political from the economic. This means that, under capitalism, appropriation of a political nature, or the acquisition of political power, is not necessary to the internal domain of capitalism in acquiring surplus value from direct producers.⁸ As opposed to the feudal order, where the dominant groups used political means to appropriate surplus from direct producers, capitalism simply veils its political nature behind an equivalency of exchange (Marx, 1976). While it is important to recognize the role that the perceived equivalency of exchange has in reinforcing the market, it is a different aspect of the market that is at the core of capitalist development. Under capitalism the market is not

⁷ Extra-economic coercion is understood by Wood (1999) as a type of appropriation, “by means of direct coercion, exercised by landlords or states employing their superior force, their privileged access to military, judicial, and political power” (p. 95-96).

⁸ As we know, capitalism is clearly political in its continuous ‘Primitive Accumulation’ on the outskirts of any given capitalist system. Without this domain of direct theft, the system would quickly deplete itself, however, in this thesis, an examination of the internal domain of capitalism ensures a much clearer understanding due in part to the non-unique nature of historical theft.

simply a choice, it is an imperative (Polanyi, 1944). It is the absolute dependency on the market for the reproduction of both capitalist and labourer that constitutes the second characteristic of capitalism. This could only come about through a complete disappropriation of the peasant from the land. With only their labour-power to sell, the labourer is forced to find a new means of reproduction. Through both disappropriation and the emergence of capitalist imperatives, wage labour becomes the dominant mode of reproduction (Takahashi, 1952). Therefore, it is these three distinctions, the pseudo-purely economic character of capitalism⁹, the disappropriation of the labourer from the soil, and the emergence of wage-labour, and in effect capital, that constitute the fundamental qualitative ruptures with the previous feudal order in England. Only once these characteristics become integrated into the dominant mode of production and reproduction across England, can we characterize a complete shift to the capitalist mode.

This specific characterization allows us to avoid muddling capitalism with forms like commercialism, while also avoiding the assumption of a capitalist logic before the appearance of capitalism (Weber, 1958). While this definition explains the emergence of capitalism, it does not fully illuminate the dissolution of feudalism.

England by no means provides what could be considered the quintessence of Western European feudalism. Feudalism of the English variety must be understood as a heritage of Scandinavian, Anglo-Saxon, and Norman conquest, which produced a unique

⁹ Equivalencies of exchange appear as though they were apolitical actions, but that is only because it is assumed that the two parties meet as equals in the market of exchange that we can imagine them as politically on the same ground. Without an examination into the internal relations of the capitalist mode, then one would only continue examining appearances without ever getting to the real relations iterating these movements.

social arrangement characterized by a relatively developed centralized state and system of popular justice (Anderson, 1974). While many historical differences exist between English feudalism and other forms of Western European feudalism¹⁰, we must understand the root of the English feudal order specifically (Hilton, 1973). Surface level particularities tend to obfuscate these key relationships and practices, and for that reason, a clear definition of feudalism is needed.

For this thesis, we are understanding feudalism as a system dependent upon the extra-economic coercion of surplus. By extra-economic, what is meant is the necessity for a political force to appropriate surplus. What differentiates feudalism from all of other modes though, is that “property was privately controlled by a class of feudal lords, who extracted surplus from the peasants by politico legal relations of compulsion” (Anderson 1974, p. 147). This is typically understood as the exploitative relationship between landlords and peasants. Unlike capitalism, which uses the market to justify a purely economic appropriation, feudalism requires a political means to extract surplus from those who are direct producers and is founded upon a relation of dependence between peasant and lord (Wood, 1999). This definition illuminates what lies at the core of the feudal order: the absolute unity of politics and economics and the relations of dependency (Polanyi, 1944). This definition of feudalism is not singling out the mode of production, the role of the city or the relation of exchange because feudalism took many different

¹⁰ While common characteristics do exist between English, and specifically French feudalism, the relation that the labourer had to the land and to the market took a divergent path between the 15th and 17th century for English peasants. In France the reenservment of peasants led to the development of the absolutist state, in England, this reenservment was not possible given the events following the Peasant Revolts of 1381.

forms, but all can be characterized by these features. Feudalism, therefore, is a social order that cannot be understood in a purely economic or purely political sense. As a classification, it does not overestimate the juridical or economic nature of the feudal order, but it allows us to understand what must occur within feudalism to dissolve the unity of the political and the economic, and with that, the relations of dependence that connected those two spheres.

The classification of both capitalism and feudalism have been discussed, yet what remains unclear is why the dissolution of feudalism led to the emergence of a capitalist class. We must wonder, rather than assume, what drove peoples to begin, and continue, acting like capitalists? While conditions for capitalism may have been present, these conditions being present does not mean that it necessarily needed to emerge. One could assume that humans have a natural propensity for capitalist behavior, which then makes the question one of metaphysics and not of history (Locke, 1690). Economic thought during the capitalist epoch has tended towards this style of thinking, invading even the thinking amongst some of the most critical Marxist historians (Hobsbawm, 1964, Anderson, 1979). Naturalizing a capitalist logic does not allow us to understand a historical transition, instead, it merely assumes feudalism as a step in the process of an end capitalist goal. Therefore, both for philosophical and for historical reasons, this thesis does not accept that premise.

We must understand the emergence of this new capitalist logic as a byproduct of class relations and material transformations, produced by both social imperatives and ecological disruptions within and outside of the English feudal order. The rise of

capitalist logic was an imperative and not simply a choice. Rather than assuming that in the English countryside people began to act like capitalists because an opportunity arose, this thesis unearths the necessities placed on specific groups to reproduce themselves in a capitalist manner (Weber, 1927).

Now, no single area of this debate has, in my opinion, received as little critical analysis as the endogenous/exogenous dynamics argument. Economic historians have sought to find the internal dynamics within feudalism, or the external forces rearranging the feudal mode to explain the dissolution of feudalism (Merrington, 1975, Sweezy, 1976). The internal/external nature of the debate does allow for simplification and possible explanation, but it comes at the expense of real dynamics or dialectical understanding of the movement. Often, it is assumed that either feudalism was inherently unstable (Anderson, 1974) or that it was simply overtaken by capitalist actions (Hilton, 1976). Both views overlook the firm and self-sustaining nature of the feudal mode. Why is it that we cannot assume that feudalism could have continued to persist in England past the 19th century? How is it that we have come to see capitalism as inherently endowed with reorganizing mechanisms, but somehow see feudalism as a passive stage in the development of capitalism (Bloch, 1974)? By no means did any English peasant in the 16th century imagine feudalism as a static system. It had sustained itself since at least the 10th century and did not appear in its death throes until well until the 17th century. Regardless of the general acceptance amongst certain groups of scholars, the explanations deriving transformation from a single internal condition, or a powerful force from outside

the feudal order, are to be rejected and instead replaced with dialectical understanding of the movement of history.

As a replacement for the dichotomy between internal and external dynamics, this thesis takes a more porous stance on the solvent sources of feudal dissolution. By porous, what is meant, is that the internal and external cannot be thought of as entirely disconnected from one another. They are in a dialectical relation with one another. If we are to take seriously the notion of social imperative or ecological crisis, then we must recognize that what is internal becomes the external and the external the internal. The case of the ecological crisis in the 13th century illustrates this the most fruitfully. As the English climate began cooling, the land began producing at lower levels than it historically had, forcing the English lords to seek surplus in a new manner to maintain their level of existence. This forced the English peasants into the solution of expansion into the moors and bogs which had been previously unworked. The external ecological change of the Little Ice Age, which began around the year 1300, produced an internal shift in the English mode of production, which in turn forced an expansionary tendency in the English peasantry. By only examining one phase in this historical movement, we could come to the conclusion that it was simply internally or externally driven, yet if we look at the entire process, its parts dissolve and reinforce the porous nature of the transformation. These changes in history did not come about mechanistically, nor can they be reduced to simple casual relationships, however, there do exist certain realms that are more interwoven together than others.

While it is undoubtedly true that the dissolution of feudalism and the emergence of capitalism required a transformation of certain ‘internal’ dynamics, these dynamics did not exist in isolation. Just as a border presupposes something beyond it, the internal presupposes an intimate connection with the external. Therefore, a hard stance of internal or external is not being taken in this thesis. In this acceptance of both internal and external dynamics, what is achieved is an approach that integrates historical transformations through human history into natural history.

This project will cover the development of capitalism out of feudalism specifically in England, tracing its ecologically conditioned roots. Thus, we must understand the expropriation of the vast majority of the people’s in England from the land that they worked as subsistence farmers for thousands of years, and their absorption into a system where the only means of survival became the selling of their labour-power on the market. Various schools of economic history argue that capitalism emerged at other points in European history in other geographical locations other than England, but it is clear that the English case represents the first instance in which a clear break from feudal relations towards capitalist relations was sufficiently sustained (Dimmock, 2015). The English case, therefore, represents a clear break with the past and for that reason, it is the ideal case study for the transition.

2.3 Theoretical Apparatus

The dominant mode of Western philosophical thinking has historically rejected notions that humans can know nature. Nature, for most of Western history, has been

considered something distinct from humanity (Nail, 2019).¹¹ Nature was seen as external to human consciousness, and in effect, outside of human knowledge. Meanwhile, moving through the undercurrent of this dominant narrative was the tradition of materialism, beginning initially in Ancient Greece with Epicurus and Democritus, transforming through the Roman poet Lucretius, and finally being taken up seriously by the young Karl Marx. While the materialist tradition grew during the Enlightenment, it was something saturated with threads of mechanism, reductionism, and vitalism, all of which relegated the creativity of nature to something other than itself. Whether that be God, an abstract conception of life, or simply immaterial spirit. Outside of Lucretius' *De Rerum Natura*, the earliest rigorous materialist account of matter and its self-creative potential came from Marx's doctoral dissertation; *On the Difference Between Democritean and Epicurean Physics (1841)*. In this dissertation Marx puts forth an account of dialectical materialism, as a form of materialism that rejects mechanism, rejects spiritual idealist notions of matter, and more importantly recognizes nature as a continuous flow rather than discrete atoms (Nail, 2019). Rather than accepting Enlightenment notions of mechanistic atoms, Marx is proposing a theory of nature, and in effect, humanity, as a continuous process. For Marx, dialectical materialism is the perpetual movement between humans and nature, but not as discrete things acting on one another, but rather as different expressions on the same continuous surface of natural processes (Lenin, 1972).

¹¹ This is undoubtedly a blanket statement on the history of Western thought, but it is illustrated throughout the work coming out of New Materialist thought, specifically, the work of Karen Barad, Brian Massumi, and Erin Manning.

While this may not at first glance seem pertinent to a discussion of economics, it is necessary if we are to discuss the interconnection between humans and nature that lies at the heart of all economic activity (Foster & Burkett, 2017). This thesis adopts the dialectical materialism of Marx. Dialectical materialism is taken as the first of three main theoretical positions in this thesis, which are dialectical materialism, conditionality, and relationality.

Dialectical materialism broadly may explain historical changes, but within materialism, it is the notion of conditionality that allows us to comprehend the potentiality of historical emergences. History moves through a perpetual interaction between different social and natural processes and these processes are dependent upon certain conditions. A condition is to be understood as a feature that allows for something else outside of itself to exist. Anything without its conditions for existence would no longer exist. It is a relationship of absolute dependency. What makes this relation interesting though, is that a condition is not always dependent upon what it creates conditions for. An example may suffice to illustrate this point. In the case of a plant, because water exists and is one of the conditions for that plant to survive, there is a possibility that it emerges. However, without water, the plant could no longer exist. It is dependent upon that water for its life, but regardless if the plant exists, the water will continue existing. Essentially, this relation that the plant has to water, is the same relation that humans have to nature. We take nature as our objective condition for survival, and without it we could not survive. We may want to imagine humanity as isolated or separate from our objective conditions—nature—but that is simply an abstraction and

takes for granted the conditions that allow for our existence at all. While conditions do create a trajectory of possibilities, they also inherently limit them. Continuing the plant example, given soil, nutrients, water, sunlight and a seed, a plant may emerge or may not emerge, but given these conditions, it is not within the realm of possibility for the soil to produce something besides a plant. History works in this very same manner. While in 1789, many may not have expected the French Revolution, the conditions had ripened for its emergence as a historical moment, but while the French Revolution may have been possible, the Apollo space project had not yet moved within the realm of real possibility. The conditions for that historical moment may have been slumbering in nature, but historically this had not yet become possible.

Conditionality is vital to understanding history because humans are always interconnected with nature as its condition for existence. Once the connection to nature is made, humans have the capacity to alter, or mediate, nature, but only to a certain degree. After a threshold is reached, humans or nature itself can undermine its conditions. Humans fundamentally alter their conditions in many ways, sometimes creating more resilient systems, and at other times destroying them. Conditionality and its importance in understanding the key conditionalities linking humans with nature is the second theoretical position being adopted for this thesis.

The final theoretical position should be thought of as an extension of conditionality rather than something fundamentally different from it. Relationality is the principle that all things have relations to other things outside of themselves, and this idea allows us to make sense of the various connections between things that may appear as

distinct entities. A theoretical approach founded on relationality forces any analysis to recognize how specific phenomena are intertwined together. Through an examination of relations, we can make sense of what sustains or affects a given phenomenon. Being that both nature and human society only exist because of the complex networks of relations that iterate certain patterns, including relationality as the third and final theoretical position is fundamental to understanding the historical development of capitalism.

2.4 Historical Method

There are many ways in which to conceptualize history, whether it be the development of ‘*Geist*’ (Hegel, 1956)¹², the transformation of mentalities or ideologies (Braudel, 1992) or a dialectical unfolding of a purely socially determined history (Lukacs, 1968)¹³. Regardless of their influence, this thesis instead takes seriously Marx’s method of understanding human history metabolically. It seems necessary here to spend a bit of time being tangential to make explicit the importance of metabolism in the body of Marx’s work. Metabolism for Marx is how we are to understand the relation between humans and nature, humans to each other, and nature to itself. What differentiates this theory of historical movement from others is that it places humans ‘working’ through

¹² This is a reference to Hegel’s *The Philosophy of History*, where Hegel explains the development of human history. In this he proposes that ‘Spirit’ or mind moves through different stages of development through history, eventually leading to what he believes to be ‘Spirit’ unfolding into the shape of the Prussian state. In many ways, it is a story of the beginning always necessarily leading to the end, which is inevitably the present.

¹³ Lukacs is one of the great Marxist theoreticians of the 20th century, but much of what led Western Marxism astray during this period was a neglect of understanding that dialectic existing within and through nature itself. This is one of the divergences between Marx and Engels, most clearly seen in Engels *Dialectics of Nature* as well as in *Anti-Dühring*.

nature at the center of historical changes, instead of positing some type of metaphysical force or teleological principle. The term ‘working’ here is used intentionally. If we take earnestly Marx’s (1976) notion of labour as “a process between man (*Mensch*) and nature, a process by which man, through his own actions, mediates, regulates and controls the metabolism (*Stoffwechsel*) between himself and nature” (p. 283), then all interactions humans have with the world are to be understood as labour. The word Marx used was not the French term *métabolisme*, which he was aware of, but he instead used, *Stoffwechsel*, which originates etymologically from the two German terms, *Stoff*, meaning matter or material, and *Wechsel*, meaning change. This term finds its deeper origin in the Latin root, *vices*, meaning alteration. From these roots, we can derive a basic meaning of the term metabolism, as meaning the alteration or changing of matter. A bit later in this same chapter of *Capital*, Marx (1976) states that humans develop “the potentialities slumbering within nature, and subjects the play of its forces to his own sovereign power” (p. 283). This development of the potentialities in nature are simply the dialectical relation between nature and the subject, i.e. the labour process for Marx, but Marx’s labour process is not simply a subject acting upon an object as one may assume. For Marx (1973), labour is not simply the actions of humans on nature it is a truly reflexive notion.¹⁴ As humans act on external nature they simultaneously act on themselves. The subjective character often attributed to humans and the objective

¹⁴ Just as with the case of a reflexive verb in a language, the subject cannot be fully distinguished from the direct object, meaning that the subject is simultaneously subject and object. One might think of Newton’s third law of motion, where the act of pushing on an object, is also the receiving of the push on the subject.

character often attributed to nature become quickly dissolved in this dialectical notion of metabolism.

Underlying this conception is a recognition that environmental history and social history are deeply interwoven. We cannot understand human history isolated from natural history, nor natural history isolated from human history (LeCain, 2017). Ultimately this makes the material practices that humans and nature iterate over time at the heart of history itself. Essentially, if we want to understand the world, we must look at historical performative patterns that both humans and nature have iterated. For its centrality in understanding historical change, metabolic performativity is taken as the first methodological approach being used in this thesis. The other two methods being put forth pertain to understanding the role of specific conditionalities in historical developments as well as grasping history through its qualitative ruptures rather than simply weighing all events equally historically.

There are many patterns prevalent in an economic system, but not all are as structurally significant. There are aspects within a system that maintain the structure of the system together more than others. For example, without economic actors, there is not a capitalist mode of production. Without food, there are no agents. Without the sun, there is no life. This seems a bit dramatic, but it points to the fact that capitalism as a system cannot sustain itself without certain aspects, and that its reproduction is dependent upon certain key conditions, and in this case, ecologically structural conditions (Kloppenborg, 1988). This thesis is specifically trying to illustrate that three particular relationships; agriculture, wool and textile production, and mining, are the most structurally significant

conditions in understanding the transition. They are central in the movement from feudalism to capitalism and fundamental in understanding socio-natural relationships.

For the sake of clarity, it must be made clear that a conditionality approach is not deterministic. A condition does not necessarily produce certain historical developments yet within a condition are certain developmental potentials, that when they emerge are not random. It is fundamentally relational and contingent. Conditions open up specific historical trajectories.¹⁵ They are relational contingencies and not relational necessities. Meaning that embedded within certain historical processes are the potential for transformation, but until actualization, they remain potentialities. This conditionality centered approach overcomes the issues of mechanism and randomness so often ascribed to historical processes and represents the second methodological approach being put forth in this thesis.

The third and final methodological tenet is an emphasis on truly qualitative change. While things are constantly in a state of flux, there is relative stability that both nature and humans reproduce. Perpetual flux without qualitative transformation is merely quantitative fluctuation. Just as water may fluctuate slightly at room temperature, it nevertheless remains water, meaning that it does not undergo a qualitative transformation. Quantitatively it may shift, but it does not reach a point of transformation. It is not until the temperature of water reaches a threshold, a boiling point, that it qualitatively transforms into a new form. History may iterate reoccurring patterns, but the

¹⁵ A historical contingency is a conjuncture of many key events coming together at a historical moment to create the possibility for something to occur. It need not occur but has the potential to occur.

transition from feudalism to capitalism constitutes a threshold in human and natural history. This transformation is a clear rupture with the past. While the continuities of the past are vital to understanding history, this thesis is trying to examine the peculiarities.

This chapter has sought to properly historicize the capitalist mode, as something much more than commercialism, industrialism, or rapid technological transformation. Capitalism is a system that relies upon the pseudo-pure economic character of market exchange, the disappropriation of the labourer from the soil, and the emergence of wage-labour. Capitalism is not simply irrational greed that must be quelled, it has a unique logic, which emerges historically, and is much different than the logic of the feudal order. All of these historical developments are dependent upon transformative social and natural relations that disrupt the system both ‘internally’ and ‘externally’. In this chapter, three theoretical positions were put forth to create an apparatus that could properly grasp the complex relations between humans and nature. These three points, dialectical materialism, conditionality, and relationality constitute that theoretical apparatus. The chapter concluded with an exposition into the broad method being used to historicize the ecological transition from feudalism to capitalism, specifically, emphasizing the need to understand this historical change through the lenses of performativity, specific key conditions, and qualitative transformation. At this point a contextualization of the debate, three theoretical positions and a clear methodology to overcome the shortcomings of previous inquiries have been made clear, it now becomes necessary to delve into the historical narrative itself. This story begins with an examination of agriculture, and its role in loosening the bond between English society and the soil.

Chapter 3: Enclosure & the Death of Traditional English Agriculture

3.1 Contextualizing the English Case

The fully bloomed invasive plant, that we think of as capitalism, was at one point a seed that needed to germinate within the feudal order (Hobsbawm, 1962). While feudalism had to fully dissolve in order to produce the capitalist mode, there is much to be explained in order to arrive at the full bloom of this ‘plant’s’ development. It is not as though peasants one day awoke to a world of capitalist property relations, complete market dependence for their reproduction, and entirely unstable ecological relations. For this seed to both be planted as well as to germinate required very specific conditions that had never before been seen in English history. This analysis applies large brushstrokes to illustrate the pre-1400 historical developments that created the conditions for the start of the dissolution of the feudal order. By no means will this capture the particularities of historical developments but is meant to orient the reader to the major movements in English history.

It must be noted that the English landscape has been in a state of constant alteration since the Neolithic (2500-1900 B.C.E.); first with nomadic pasture farming dominating the interaction with the soil until settled agriculture developed around

500 B.C.E., it has been radically transformed by five key historical developments from 1086 until 1400. These pre-1400 historical changes prepared all of England for a historical rupture with the past.

3.2 Pre-1400 Crucial Historical Developments

The first of the major historical developments before 1400 was the slow colonization and reclamation of the marsh, fen, and moor, along with the clearing of the woodlands. Unlike England of the modern period, medieval England was a country whose landscape was dominated by woodland. As was stated by Hoskins (1957), “From rising ground England must have seemed one great forest before the fifteenth century, an almost unbroken sea of tree-tops with a thin blue spiral of smoke rising here and there at long intervals” (p. 69-70). Regardless of the vastness of the English woodlands, by the beginning of the 14th century, English lords had extended their colonization efforts as far as the English landscape could withstand. While the fen, moor, and bog had been fully reclaimed to this point, the woodland, although certainly smaller than it was two centuries before, remained a part of the marginal land that had yet to be fully absorbed (McKisack, 1992). Since the 11th century, English peasants had slowly transformed these areas that had been historically untended into pasture or farming land, but by the end of the 14th century these marginal lands had been almost entirely exhausted (Postan, 1972). The only land that remained for expansion was that of the woodland.

The second major historical development was the ending of the Medieval Warm Period, which lasted from about 1000 C.E. to 1200 CE, and is characterized by an

increase in temperature by 1.2-1.4 degrees Celsius increase along with ten percent more rainfall (Lamb, 1982). This amounts to an uncharacteristically warm and wet two-hundred-year period across most of Western Europe, allowing for increased crop production, and in effect, increased surplus to English lords particularly. During this period English farming found itself expanding into regions it had never expanded to before, but with the onset of the Little Ice Age, much of this growth was short lived. The Little Ice Age was in full effect in the British Isles by around 1300, bringing with it, increased cooling, along with more volatile weather swings and increased storminess (Fagan, 2000). In effect, producing a complete reversal in climactic conditions in just over a hundred years.

The third, and potentially most apparent transformation, came with the emergence of the bubonic plague. The Black Death entered England for the first time in 1348, bringing successive outbreaks over a thirty-year period which eventually reduced the population by at least one third, and with some estimates claiming one half (Hoskins, 1957). While these effects were not felt across the entirety of England, they were absolutely vital in shaping the 15th century. With the land-labour ratio, for the first time in centuries, beginning to favor the peasant, the relationship between peasants and landlords became much more volatile. In the text that illuminates the development of the new tension between peasants and lords in England, Rodney Hilton (1973) states, “In the shorter term, the immediate impact of the Black Death had been that both agricultural and other workers demanded, according to the strength of their local bargaining power, up to twice or even three times their previous wages” (p. 154). Overall, the bubonic plague in

England brought with it more tense social relations between peasants and lords, not to mention a subtle redistribution of power from lord to peasant.

The fourth major development prior to the 15th century was the transition to tripartite field rotations, with ever increasing use of fertilizers to replenish the nutrients in the soil. A simple biological fact about the cultivation of wheat is that it cannot be cultivated on the same plot two years in a row without damaging effects. In the English system, which must be noted was by no means a hegemony of practices, the land was generally “divided into three fields: winter cereals, spring-sown cereals and fallow”, where “In successive years, wheat replaced fallow, oats replaced wheat and fallow replaced oats. This was the cycle of triennial rotation; after three years the situation was the same as at the beginning” (Braudel 1979, p. 115). This practice had emerged as early as the 8th century across much of Western Europe but had avoided the vicious cycle of nutrient depletion by careful fertilizer recycling through balancing crop productivity and livestock fertilization (Moore, 2003). Regardless of its intentionality, this process had sustained itself across Western Europe since at least the 8th century and was done without the intention of true ‘improvement’, or rather, surplus for the sake of surplus (Dobb, 1947).

The fifth of the major historical developments, was the slow germination of what would later be known as money rents.¹⁶ In the 14th century, with free peasants becoming

¹⁶ Historically, the dominant mode of exchange between lords and peasants was rent-in-kind, typified by the peasant cultivating the land in return for access to the land. This is the typical land-holding relationship through most of English history, yet in the 14th century we begin to see peasants having to pay their leases in the form of money, as opposed to grain or produce, and while this may seem like a minor point, it stands as an absolutely fundamental point of rupture in the relationship between peasant and lord.

more prevalent than had previously been seen in England to that point, the extraction of surpluses from peasants in the form of money rent was slowly gaining prevalence. Hilton (1973) makes note of this development by stating, “At various times the level and the nature of rents and services owed by peasants to their lords were altered in a way demanded by peasants. There was a long-term, though occasionally reversed, trend away from labour rent towards money rent” (p. 154). While no single originating point can be delineated as to when money rents became the dominant form of rent for English peasants, it is absolutely vital to recognize that this process had already begun by the rise of the peasant revolts at the end of the 14th century. Marx (1967) also recognizes its importance in affirming that:

The transformation of rent in kind into money-rent is furthermore not only inevitably accompanied, but even anticipated, by the formation of a class of propertyless day-labourers, who hire themselves out for money. During their genesis, when this new class appears but sporadically, the custom necessarily develops among the more prosperous peasants subject to rent payments of exploiting agricultural wage-labourers for their own account, much as in feudal times, when the more well-to-do peasant serfs themselves also held serfs. In this way, they gradually acquire the possibility of accumulating a certain amount of wealth and themselves becoming transformed into future capitalists. The old self-employed possessors of land themselves thus give rise to a nursery school for capitalist tenants, whose development is conditioned by the general development of capitalist production beyond the bounds of the country-side. (p. 798-799)

In Marx’s own line of thought, it is this earliest development in money rents that provided the conditions for the emergence of the capitalist class. Nevertheless, there is indeed much more needed historically to produce the capitalist mode. To this point, the most significant developments prior to 1400 have been illustrated, but now the relation to the soil—agriculture, from the 15th to the beginning of the 19th century will commence.

3.3 Estrangement Between the Peasant and the Soil

There are three fundamental changes, Marx (1973) notes, that must occur to agriculture within the feudal mode in order to arrive at a point where labour can possibly encounter capital on the market. The first of those three being the dissolution of the relation to the Earth. Marx (1973) describes this relationship as a relation of, “Land and soil—as natural condition of production—to which he relates as to his own inorganic being; the workshop of his forces, and the domain of his all” (p. 497). Inorganic in this passage does not refer to something dead or non-living, but rather as something external to labour. A necessary part of labour itself is that there is material on which it can act. Labour, devoid of the means of creation, does not really constitute anything that we could constitute as labour. This section covers the historical developments that led to the dissolution of this relation.

Often over-emphasized amongst certain economic historians, but quite integral to understanding the nature of feudal society, is the fundamental orientation to self-sufficiency. The English feudal order, contrary to scholars following in the same vein as Braudel’s *Civilization & Capitalism 15th-18th Century: The Wheels of Commerce* (1979) (Wallerstein, 1976, Pirenne 1933), should be thought of as a patchwork of relatively isolated villages up until even the 17th century. As Wild (2004) states:

The villages there were fashioned in the ‘Olde’ or ‘Merrie’ England of the sixteenth and early seventeenth centuries were organic not only in the physical sense of being built out of materials derived from the immediate vicinity, but also in their economic self-sufficiency and the degree to which their inhabitants depended upon each other. (p. 6)

Adopting this perspective does not underplay the intimate relation between the city and countryside, but it does propose an alternate image of English society. While it is true that the relationship between the city and the country characterized the medieval period (Williams, 1973), besides for the limited trading of luxury goods and wool between larger cities, both city and countryside existed as relatively independent entities. During the feudal mode, the city and countryside did not exist antagonistically as they do under the capitalist mode, instead they represented different qualities within a broader ecological order. Under the capitalist mode, the city is necessarily dependent on the countryside, yet under the feudal mode the city and countryside simply represented different modes of self-sufficient life. These modes of life are most clearly presented in archetypes, folklore, and literature in general. The real antagonism of the feudal mode rested in the relation between the peasant and the lord. It is in this relationship that we will be able to find a fruitful analysis of the feudal order in its totality and, for that reason, that relationship needs to be explored carefully.

The relation between the English peasant and lord in the 15th century was no different than the rest of feudal Europe; the relation was overwhelmingly parasitic. The land that the peasant laboured and lived on was not owned by the peasant. Both the peasant and the lord sustained themselves from its fruits, but the lord was the sole owner of the property. Put most clearly by Perry Anderson (1974), “Agrarian property was privately controlled by a class of feudal lords, who extracted surplus from the peasants by politico-legal relations of compulsion” (p. 147). Up to this point in English history, the means of obtaining surplus from the soil was always through an increased level of labour.

Unlike contemporary industrial farming, where increased productivity per acre is the byproduct of bio-engineering and intensified fertilization methods, English farming was dependent upon increases in labour solely to produce more output. More peasants meant more land, which in effect, meant more crop production and greater wealth. Therefore, it was an absolute as opposed to a relative gain from the peasantry. Prior to the 15th century, increased productivity was not necessarily desired; the lords simply relied on a growing peasant population and a perceived inexhaustible amount of land to be reclaimed for their increased appropriation. The bubonic plague, Little Ice Age, and complete colonization of the fens, moors, and bogs all occurring at the end of the 14th century, radically altered this strategy for the lordship. With fewer peasants, exacerbated by less than ideal climactic conditions, agricultural production saw a significant decline. Nevertheless, the expectations from lords did not cease. At the beginning of the 15th century, the lordship was only beginning to realize that its lifestyle of abundance was becoming much more difficult to secure. With fewer peasants, decreased production, and peasants in a newly acquired position of power, something had to give. The result: “a decline in seigneurial revenues, which in turn unleashed an unprecedented wave of warfare as knights everywhere tried to recoup their fortunes with blunder” (Anderson 1974, p. 200). The situation in the 15th century was quickly becoming dire for the lordship. The limitless ‘wasteland’ that characterized the 12th through the 14th centuries had been exhausted, and the always steady supply of labour had been reduced to a fraction of its size. All the while, re-enservment was occurring across the continent, yet the peasant revolts of 1381 had made it very clear that for the English peasantry the pendulum had swung in their

favor. While the lordship was seeking to bind the peasantry to the land through the use of rents-in-kind, the peasantry was rejecting this in favor of greater mobility to move to lands of their liking. At this point, it is apparent that the 15th and 16th centuries was ripe for new property relations.

What we see in the 15th century is something alien to the history of English property relations: the growing dominance of money rents. As the ability for political coercion was slipping through the fingers of the lordship, it meant that:

they depended less on their ability to squeeze more rents out of their tenants by direct, coercive means than on their tenants' success in competitive production. Agrarian landlords in this arrangement had a strong incentive to encourage—and, whenever possible, to compel—their tenants to find ways of reducing costs by increasing labour-productivity (Wood 1999, p. 100).

Each economic position in the social hierarchy had its own desire. The peasantry desired increased mobility and freedom from bondage, while the lordship was seeking to enhance both its surplus and political power. The result of this tension produced the dominance of money rents; something valuable both to the lord and to the peasant. An interesting phenomenon emerges with the advent of money rents though. Land, for the first time for the peasantry, had become something that could be acquired through exchange; it had become something possible to be acquired on the market. What we begin to see is a relation between the growth of a landed peasantry and increased agricultural productivity. Those who produce the most grain can amass the most wealth, which in turn, allows them to bring news lands under their cultivation. It is what could be thought of as a positive feedback loop. Once money rents become the dominant mode of landed property-relations, these relations only intensify and reinforce themselves. As specific peasants

begin accumulating money from increased agricultural productivity, this then opens up the potential to amass larger areas of land through exchange. With this historical movement we begin seeing the rise of English vagabondage unlike ever seen before in English history. As specific peasants and lords began consolidating land, the peasantry unable to secure their landholding, was forced to roam the English countryside searching for a new means of reproduction. With the creation of the vagabond also comes the creation of a new breed of farmer. It is in the 15th century that we see the earliest development of the industrial farmer, but most certainly could not have historically emerged as an industrial farmer until at least the late 18th century. Capitalism, to reiterate, is not simply an orientation taken up by English yeoman in the countryside, it is a complex set of social and natural relations that could have only emerged out of specific historical developments.

By the end of the 15th century the English yeoman had emerged as a prominent element of English society. A yeoman is taken to be “a commercial farmer, someone who farmed for the market rather than merely to feed his family, and someone whose farm was large enough to require help from non-family labour” (Zell 2000, p. 70-71). The rise of the English yeoman foreshadows the earliest inklings of a monumentally important transformation for English agriculture; the movement from subsistence to surplus-seeking, or what Locke (1690) calls ‘improvement’. Perhaps there is not any clear link between the rise of English yeoman and Locke’s notion of improvement, but Locke’s definition of property may prove insightful for this inquiry. In Locke’s (1690) *Two Treatise on Government*, he states, “As much Land as a Man Tills, Plants, Improves,

Cultivates, and can use the Product of, so much is his property.” (p. 290) He then furthers his point by claiming that:

God gave the World to Men in Common; but since he gave it them for their benefit, and the greatest Conveniencies of Life they were capable to draw from it, it cannot be supposed he meant it should always remain common and uncultivated. He gave it to the use of the Industrious and Rational (Locke 1690, p. 291).

The point being made, is that the growth of the ethic of improvement was only strengthened by the work of Locke. If improvement is one of the foundations of the capitalist mode, then Locke’s treatise on property and improvement simply serves as a reinforcing buttress. The logic of improvement, or efficiency, or whatever other guise it may go by, finds its earliest origins in the movement from subsistence to surplus-seeking through the actions these English yeomen. It is this group of English society that represents what Marx (1977) describes as “a class of capitalist farmers who were rich men in relation to the circumstances of the time” (p. 907).

All of these developments have produced new social-property relations around agriculture. For the first time in English history, the peasantry and yeoman have an opportunity to ‘improve’ property that they take to be their own. They can in this new arrangement bring under their sway vast amounts of land that had been previously controlled by either the Church or custom. There are qualitatively new arrangements being produced during this period, but unlike the enclosure movement in the 1780s, the enclosure movement between the 1400s and 1600s is accomplished through a quickly metamorphosing peasantry that is seeking to reproduce itself in new manners.

Between 1400 and 1600, it would still be fair to characterize the relation to the earth as fundamentally organic. A unity between the English peasantry and the soil had yet to be dissolved. The peasantry, regardless of the size of the property controlled, took the soil to be their fundamental condition for existence. Much had changed; yet much had also remained the same. The agricultural techniques of the period were not radically different than what had appeared in the countryside 400 years before. Since the 10th century, the horse, outfitted with shoe and padded collar, had remained the dominant form of power for the peasantry (Mumford, 1934). The heavy wheeled plow, described as:

a very formidable agricultural weapon, equipped with a colter cutting vertically into the sod, a flat plowshare cutting the grass horizontally at the roots, and a moldboard designed to turn the slice of turf. Its two wheels enabled the plowman to move from field to field and helped him regulate the depth of the furrows (Gimpel 1976, p. 43).

In the 14th century this tool was still in common use. This technique had increased the yield of wheat by between 2.5 and 4 times what they had been prior to the 14th century; this development, however, was not driven by the ethic of 'improvement'. Greater surpluses may have been the result, but surplus-value was not the motivation behind the adoption of this technique. These techniques certainly granted greater exchange-value to the lord, however, unlike pure exchange-value, the result of these techniques always yielded products meant to be saturated with use-values. Even the movement to a three-field system, which reduced the amount of land that laid fallow in a given year and increased output, did not dissolve the relation to the earth, but instead strengthened it. It is important to note that under a three-field rotation, the crops produced were altered. Under

this new arrangement, spring planting brought vegetables as opposed to the typical grain, only diversifying and strengthening the nutrition of both humans and the surrounding ecosystem (White, 1962). Agriculture through the 16th century was not perfectly harmonious; however, it certainly had a qualitative balance. English peasants sought ecological complexity and dynamism as opposed to a hegemony of practices. All aspects of the ecological environment were utilized to their greatest potentiality without any sort of modern notion of ‘economic efficiency’. For instance, even sheep played a significant role in the ecological vitality of feudal agriculture. The sheep would graze, in effect, depositing fertilizer which they would then fold into the field with their hooves which only further cultivated the land. These biological and ecological methods were not thought of as scientific, but rather was thought of as the development of an art. It was while these arts were emerging, that the earliest capitalist prerequisites were also beginning to sprout. It is important to remember that the English countryside from the 15th to the 17th century was not some ‘untouched’ idealist conception of nature’s beauty, but instead was a world inhabited by both humans and nature in extremely complex ways. This relationship between humans and nature will change over the next two centuries.

It was not until the 18th century that the relation to the Earth begins to truly dissolve. It is vital to note that the 17th century was a century of ongoing political turmoil throughout England. Without going deeper than surface level into the events of the 17th century, it is important to note that in this century we see the English Civil War (1642-1651 C.E.), the birth of colonial England, the rise of Cromwell’s Commonwealth (1653-

1659 C.E.), the restoration of the English Monarchy with Charles II (1660 C.E.), and finally the Glorious Revolution (1688 C.E.) closing out a politically tumultuous century (Jenkins, 2011). Political volatility tells a great deal more about a society than facts can simply portray. These historical developments tell us that the social order was transforming, and that the vying for power below the surface was finally bubbling to the surface of English society with historically altering effects. At the heart of these historical developments is the relation between peasant and lord.

The years between 1760 and 1820 are typically thought of as the years of Enclosure in the English countryside, and while it is often closely associated with the Industrial Revolution as well, something very particular has happened between the early 1700s and the 1760s. In 1706 the Parliament of Great Britain had emerged from the political instability of the 17th century with greater power (Gneist, 1895). With this advent came the shifting of political power away from the monarchy towards democratic ideals, which brought not only redistribution of power and new political relations between groups, but also the dissemination of liberal ideals. This is a vital point in English development and differentiates its historical trajectory from others seen on the greater continent of Europe (Beloff, 1954).¹⁷ After 1660 the interest of Parliament had been towards ‘improving land’, but these opportunities for improvement became realities when the Commonwealth confiscated the lands of the church, the crown, and private royalists in the 17th century (Thirsk, 1985). The earliest history of capitalism is not one of

¹⁷ On the greater European Continent what we see is the rise of Absolutism, most aptly characterized by the French Monarchy, however, in the British Isles what we see is a fragmenting of power, allowing for the emergence of a capitalist class between that of the peasantry and the landed nobility.

free and equal exchange producing vast material inequalities, it is a history of expropriation, enslavement, and theft. Given the opportunity, the peasant sought to remain tied to the soil for their own continued subsistence, yet under the capitalist mode this relation of the peasant to the soil cannot remain. In one of the most vital sections of *Capital Volume I*, “The Secret of Primitive Accumulation”, Marx (1977) sums up the pre-history of the capitalist mode in a single passage:

Hence the historical movement which changes the producers into wage-labourers appears, on the one hand, as their emancipation from serfdom and from the fetters of the guilds, and it is this aspect of the movement which alone exists for our bourgeois historians. But, on the other hand, these newly freed men became sellers of themselves only after they had been robbed of all their own means of production, and all the guarantees of existence afforded by the old feudal arrangements. And this history, the history of their expropriation, is written in the annals of mankind in letters of blood and fire. (p. 875)

What we have here is not the maintenance of private property rights, so often propounded by the bourgeois, but violent removal of the peasants from the land. From this we can see how this specific theft represents the unfolding blossom of the capitalist mode.

By the 1760s the Parliament of Great Britain had developed an intimate relationship with large yeoman farmers and landowners who had done enough minor enclosing to consolidate massive amounts of acreage, and by the 1760s these yeomen and landowners emerged in a political position to overtake the commons. What had at one point been a staple of the English countryside, the commons, was now being handed over to the largest landholding classes who sought to increase surplus from its fruits. It should be of no surprise that at this exact time, while surplus-seeking was running rampant throughout English agriculture, the notions of abstract value are being propounded by thinkers like Smith, Ricardo, and Malthus. It appears to the uncritical eye as though the

English came into wealth out of nothing, but this conception is only possible if we abstract away the conditions for the wealth in the first place: the soil. In post-enclosure England a new relation with the soil had emerged, a relation of abstract production, or rather, production for the sake of production. The relation that the peasant once had with the land had been entirely dissolved by the year 1800.

The thread that strung the peasant to the soil was officially cut with the second and final enclosure movement, which forced the peasant labourer to migrate to the city in order to find a means of reproduction. By the early 19th century, this development had become undeniably apparent (Thomson, 1950). Many previous threads, however, had been cut well before this final string. With the dominance of money rents since at least the 1690s, and the consolidation of large farms into the hands of a few, the peasant labourer in the 18th century no longer held the same relation to the soil as the labourer of the 15th century. The soil that was once a means for consumption, production, and exchange, had been transformed into simply a means of exchange. The grain or produce that rose from the soil was no longer produced as a product with specific use-values meant for consumption, but instead was forced to be sold for money in order to reproduce the peasant labourer. Under this new relation, money served as an intermediary between humans and their relation to the soil. Marx (1988) understands this transformation when he states that under the capitalist mode, “Life itself appears only as a means of life” (p. 76). Property is no longer the objective, external, inorganic matter found in the world, it is now a pure abstraction that must be taken as concrete reality. Property is now bourgeois property, or private property, which exists independently of human activity.

The soil which once was full of vitality and immensely complex qualities, is now reduced to simply a market exchange value. The act of producing these abstractions is not fake, nor is it imaginary; these abstractions are real because they are performed and become objective in the world. Abstract value absolutely is an idea and it is an idea that must be iterated by humans in order to exist, but while agriculture undoubtedly created certain preconditions for the emergence of the capitalist mode, on its own it cannot produce capital.

By 1800 the intimate and dynamic relationship that the peasant labourer once had with the land was entirely abolished, and instead, replaced with the relations of industrial agriculture. The peasant no longer had a direct relationship with the soil that once sustained them. They now must engage with the soil either indirectly or through the intermediary relation of money exchange, which fundamentally transformed the relation through the process of marketization. The soil that once provided the conditions for all of English society is now looked at as the byproduct of human toil and labour. In the imagination of the industrial farmer, the soil has now become dependent upon human labour for its sustenance rather than the inverse. Labour is now the basis of all production. It is possibly from ideas like this that something as ridiculous as the labour theory of value may emerge. This new relation with the soil is neither organic nor inorganic, it is truly something alien. It is a relation of perceived independence and disconnect from natural processes, and for this reason it constitutes a rupture in the history of English agriculture. With this dissolution to the Earth comes an equally intriguing development, the emergence of market dependence.

3.4 The Dissolution of the Initial Means of Consumption

In the Grundrisse, Marx (1973) makes it clear that for labour to meet capital on the market an imperative must exist that presses the labourer into capitalist relations. The imperative in the domain of agriculture is the lack of the means of consumption. As Marx (1973) states, “Included in both¹⁸ is the fact that he has the means of consumption in his possession before production, which are necessary for him to live as production—i.e. during production, before its completion” (p. 497). This point may seem extremely apparent, but it is often overlooked entirely. Without the sustenance that maintains the labourer before production, there cannot be a labourer to engage in production at all. This point is clearly illustrated in Ellen Meiskins Wood’s (1999) statement that:

Once the first capitalism assumed its industrial form, the market as a means of exchange and circulation did indeed become a transmission belt for capitalist competitive pressures. From then on, economies inserted in the international trading system and depending on it for their material needs, whatever their prevailing social property relations, would be subject to capitalist imperatives. (p. 145)

The relationship that Wood is illuminating in this short passage is one of dependency to the market. Under industrial capitalism, the means for existence come under the sway of the market, making it necessary to engage in market exchange in order to secure enough material to continue survival. While for the capitalist mode this is taken as natural, under English feudalism, this reliance on the market to reproduce the labourer was anything but natural. Even once money rents became the dominant means of payment, this still was

¹⁸ By both, Marx is referring to the relation that the labourer has to the earth as well as the relation that the labourer has to their instruments of production.

not true. This disappropriation of the worker from the immediate means of consumption was seen with the advent of the later Enclosure movement.

Enclosure is a term that has meant many different things throughout English history. Scholars like R. H. Tawney distinguish between the enclosure movements of the 16th and 18th century based on their fundamental motives. Tawney (1967) states:

the movement which goes by the name of enclosing in the sixteenth century has little similarity with the changes which proceeded under the same name from about 1700 to 1850, and which went on most swiftly in the reign of George III. It differs from them in method. In the eighteenth century Parliament is supreme. It is simply a committee of landlords and their hangers-on, and it makes Private Bill legislation a very easy method of getting enclosure carried out. (p. 183)

He carries this further by putting forth the claim that:

The landlords of the eighteenth century did not merely enclose. They improved as well. Part of their increased rent rolls was interest on capital which they had invested for the purpose. Now in the sixteenth century there is very little trace of any movement of this kind. What improving is done, is done by the peasants themselves. (p. 183)

The point Tawney is making in these passages is that the transformation from the 16th to the 18th centuries was not simply a shift in property-relations between landlords, but also a shift towards a capitalist logic. While the first enclosure movement sought to consolidate power, wealth, and resources in the hands of the peasants, the second enclosure movement desired greater surpluses, efficiency, consolidation, and ultimately, accumulation. These differing motives may share similarities; however, the results are undoubtedly different. With the enclosure movement of the 16th century the result was greater land and power into the hands of the landowners. Yet, with the enclosure movement of the 18th century, the result was an urbanization of the countryside, which required developments outside the realm of agriculture itself. This proletarianization of

the peasantry is most properly seen in the account from *Report on Shropshire* in 1794, when Mr. Bishton states that, “When the commons are enclosed the labourers will work every day in the year, their children will be put out to labour early, and that subordination of the lower ranks of society which in the present times is so much wanted, would be thereby considerably secured” (Hammond & Hammond 1911, p. 14). Devoid of the commons, the English agricultural labourer could no longer oppose the market. The peasant then existed solely by the will of the capitalist and Parliamentary power. The conditions for reproduction that the English agricultural labourer took as given throughout feudalism had completely dissolved, but with this disappropriation of the agricultural labourer from the immediate means of consumption comes another dissolution; the dissolution of the bondage that the peasant had to the lord.

3.5 The Peasant and Lord Relation Dissolves

Until this radical disappropriation from the land occurred in the late 18th century with the final Enclosure Act of 1797 (Hammond & Hammond, 1911), there existed something very peculiar about the bondage of the peasant labourer to the lord. Marx (1973) notes this particular relationship by describing it as a relation in which:

the workers themselves, the living labour capacities themselves, still belong directly among the objective conditions of production, and are appropriated as such—i.e. are slaves or serfs. For capital, the worker is not a condition of production, only work is. If it can make machines do it, or even water, air, so much the better. And it does not appropriate the worker, but his labour—not directly, but mediated through exchange. (p. 498)

When the lord takes the peasant agricultural labourer simply as a condition for production, then that means that the lord takes the labourer to be as much a part of the land as the soil or the water that cultivates the land. This notion, while relinquishing the subjectivity and agency of the peasant, also does not separate the labourer into two beings; one which exists subjectively without the means for material creation, and the other which exists objectively without its own will. It is this latter situation that becomes a reality for the peasant labourer under the domination of capital. The point being made here, is that under the feudal mode, the lord saw the peasant as being part entirely tangled within the already occurring natural processes under their dominion. What this relation then entails is a necessary maintenance of the conditions for survival, which included the agricultural labourer. The historical development that disbanded this relation, besides the Enclosure movement, was the transition to shorter leases and the growing dominance marketized money rents.

Shorter leases and money rents on their own does not dissolve this relation between the peasant and the lord, but with increased mobility on the part of larger yeoman farmers, these two developments create the potential for a historic rupture. In *The Origin of Capitalism in England: 1400—1600*, Dimmock (2014) grasps the nature of the economic feedback loop that was produced when he states:

market conditions started to increasingly favour lords due to the increased demand for land especially from mid-sixteenth century. Indeed by the late sixteenth century, leases shortened again to between seven and twenty years as the earlier longer leases reached the end of their terms. From the late sixteenth century there was a renewed wave of enclosure and transference of freehold and copyhold to leasehold which extended and deepened the already intensely competitive nature of agriculture. These shorter leases were accompanied by

rapidly increasing rents. At this stage, in the late sixteenth and early seventeenth centuries, these high rents and relatively short leases also paradoxically benefited large farmers in important respects because it meant that smaller peasants were ruled out of the bidding process for the renewal of leases and copyholds. (p. 93)

As was stated previously, the first enclosure movement allowed for the rise of large peasant farmers who had been previously unable to buy and sell land. Yet, after this, land was able to be accumulated and the potential grew for landowners to benefit from the antagonistic relation between small peasant landholders and the lordship. The deeper rationale for this change simply comes from the increased number of market possibilities for agricultural products, but more importantly from the need to pay land rents in money as opposed to grain. It is this forcing of the agricultural labourer to engage with the market that radically transforms the relation that the labourer and lord have to one another.

No longer does the lord take the agricultural labourer as an objective condition, because no longer is the labourer solely supplying the lord with the products of the land. Simple exchange is no longer occurring. The process of exchange, illustrated by C-C, now must add another stage in the development: money. While C-M-C is not unique to the capitalist mode, under the feudal mode, land had never been treated as a commodity like any other. The unity between the agricultural labourer and the lord is split with the introduction of necessary exchange in order to continue production. The eventual development of this C-M-C into M-C-M will be taken up in later chapters, but it should be noted that by the 19th century this mentality had been entirely taken up, but was only possible because of this much earlier historical development that dissolved the unity of the lord and the peasant.

The result of the dissolution of the laborer to the earth, the labourer to their immediate means of consumption, and the dissolution of the bondage of the labourer to the lord is what allowed for labour to be found on the market existing as though it were any other commodity. This historical narrative being told to this point in the chapter seeks to illuminate the way in which the peasant was ripped from the land and how the conditions for the capitalist mode were developed slowly, and then finally became possible with the final Enclosure Act of 1797. What must now be discussed are the ecological results of these historical developments.

3.6 Conclusion

A great deal of this chapter has been spent contextualizing the various social developments that occurred in the English countryside, which eventually led to the complete expropriation of the agricultural labourer from the land. The objective of this analysis is to place the changing social order within a much larger ecological regime. In order to understand English agriculture's historical trajectory, we must examine the antagonism that stood at the center of English agricultural production: the confrontation between peasant and lord. For this thesis, an antagonism is to be understood as the inability for two processes to exist together without the destruction of one or both concepts.¹⁹

¹⁹ Marx (1977) illustrates this point in Capital Volume I, when he states, "The driving motive and determining purpose of capitalist production is the self-valorization of capital to the greatest extent possible, i.e. the greatest possible production of surplus-value, hence the greatest possible exploitation of labour-power by the capitalist. As the number of the co-operating workers increases, so too does the resistance to the domination of capital, and, necessarily, the pressure put on by capital to overcome this

Historically, the English lordships demands from the soil were always met by a peasantry seeking to maintain its survival and a natural environment able to maintain high levels of production. By the late 14th century, these demands were no longer able to be met. The historically typical remedies that the lordship installed no longer maintained their viability. Reclamation of the fens, moors, and bogs had been completed in the 14th century, and the movement towards a tripartite field rotation in the 15th century did produce more grain, but still not enough to feed the growing desire amongst the English lords. Out of this historical development came a fascinating feedback loop. With grain production at much lower levels, lords sought surplus from direct conquest as opposed to production. The only issue with this strategy is that direct conquest itself requires increased levels of agricultural production to maintain a military force. The strategy undermines itself in many ways. While direct conquest may alleviate an acute social illness, it only exacerbates the chronic antagonism that lies at the heart of English agriculture. Behind all of this is the need to connect the peasant to the land. Once the peasant has been removed from the land, i.e. alienated or estranged from their conditions, do we see monumental issues arise. The expropriation of the peasant labourer from the land is one of the fundamental moments of abstraction needed to transition towards the capitalist mode, but on its own it cannot produce the capitalist mode.

resistance. The control exercised by the capitalist is not only a special function arising from the nature of the social labour process, and peculiar to that process, but it is at the same time a function of the exploitation of a social labour process, and is consequently conditioned by the unavoidable antagonism between the exploiter and the raw material of his exploitation” (p. 449). In this passage, Marx makes it clear that within the concept of capital is the necessity for the capitalist to be parasitic to labour-power, in effect, bringing to light the way in which these two processes are fundamentally incompatible with one another. They can absolutely exist together for periods of time, but as opposing forces they seek to dissolve one another.

By the 1500s, a claim could be made that agriculture was not the key producer of wealth for the vast majority of England. The base upon which all English wealth rested was undoubtedly the production of wool. Therefore, to speak of wealth in the English case would not be complete without speaking of wool. If the soil is the floor upon which all is built, then wool is the cushion upon which the lord sits. Sheepherding has not always meant the destruction of the land, but between 1400 and 1700 something emerged.

Chapter 4: ‘Man Eating Sheep’ & The Role of Textile Production

4.1 Contextualizing the Wool Trade

One cannot first speak of the wealth of the English people during feudalism without first speaking of English wool, and understandably, one cannot speak of English wool without speaking of the long history of English shepherding. It was during the reign of Edward III (1327-1377 C.E.) that the Lord Chancellor began sitting upon the woolsack; a sack filled with bits of wool from across the kingdom, to symbolically represent the wealth of the country. Eileen Power (1987), an influential English historian, reiterates this point when she states that, “the kingdom might have set on its great seal the motto which a wealthy wool merchant engraved on the windows of his new house”:

I praise God and ever shall

It is the sheep hath paid for all. (p. 17)

The point is that the tradition of sheep husbandry runs deeply through the history of England. As early as the 11th century we can begin to see the trading of wool outside the boundaries of the British Isles (Lloyd, 1977), however, this trade does not resemble the transatlantic trading and manufactory production of wool, and what will eventually

become cotton²⁰, that is seen in the 19th century. We must then ask, what led simple tripartite farming with sheep pasturage to develop into industrial level animal husbandry, that overtook vast amounts of woodland and arable land alike, and in effect drove the creation of manufactories devoted to the spinning of wool? To answer this question, we must look to the period from the 15th to the 17th century to unearth the particularities that brought about this historical development.

By the year 1400, the English wool trade had taken on the characteristics of a natural monopoly in the movement of wool across Europe. This was due in part to the development of the English Staple; an arrangement that sold English wool on the greater continent with the intent of taxing and controlling the flow of English wool, and while the Staple was quite powerful and pivotal in understanding the growth and development of English commerce, it is important to recognize that the Staple was already beginning to decline by the end of the 14th century (Lloyd, 1977). This trend continued well into the 17th century (Gregg, 1976) when finally, the Staple lost its importance as a source of raw wool because of the desire for finished textiles on the European continent (Wilson, 1965).

The history of the English wool trade gives us a great insight into the development of wealth both of the English crown and the English nobility, nevertheless, to grasp the development of capitalism requires us to delve deeper into understanding the

²⁰ In one of Engels (1845) greatest works, he expresses this point at the beginning of *The Condition of the Working Class in England*, “The history of the proletariat in England begins with the second half of the last century, with the invention of the steam-engine and of machinery for working cotton. These inventions gave rise, as is well known, to an industrial revolution, a revolution which altered the whole of civil society; one the historical importance of which is only now beginning to be recognized” (p. 50).

forces of production underlying sheepherding, the social relations of production between the lord and peasant, the guild system, and the role of merchant's capital.

4.2 The Rise of 'Man-Eating Sheep'

The history of sheepherding in England has not always been one of either ecological or social destruction. Historically, sheep have been interwoven with the very structure of English society, however, during the 15th century something very unusual occurred which started tearing at the fabric of the metabolic relations connecting small scale sheepherding to English society.

Before we can move forward with analyzing the transformation of the social system, we must grasp the natural relationship that sheepherding takes to the soil.

Generally speaking, flocks of sheep act as a double-edged ecological sword. They have both the capacity to revitalize the land with their manure as well as the capacity to create bleak landscapes from their style of consumption. Perlin (2005) encapsulates this point in relatively few words in the statement, that both sheep and goats "flourish in a relatively barren environment" (p. 72). Opposed to creatures like swine, which thrive in wooded habitats, sheep tend to level their landscape and produce what may appear to be nothing but desolate terrain. This does not mean that it is truly desolate, because through their consumption sheep can transform the fauna of their environment into something much more suitable for themselves, however, their self-created conditions are not always ideal for other ecological systems. In England, the land in which sheepherding occurred was almost always done by transforming arable or woodland areas into pasturage through

a process of clearing of letting go fallow. The ecological result of this historical development was the creation of sheep-runs or sheep-walks on areas of land known as chalk substrates. A passage examining how sheep alter their environment may suffice to illustrate this mode:

The close nibbling by the sheep and the shallow calcareous soils meant that, especially on slopes, a rich herb flora developed of plants unable to tolerate acid soils or being shaded by more luxuriant growth, but capable of withstanding being eaten from time to time (Simmons 2006, p.85).

On a small scale, this type of ecological transformation can be a part of a wonderfully diverse landscape, however, with once this form grows and expands, a qualitative rupture can occur. With wool production increasing between three and five times in the period between the fourteenth and fifteenth centuries (Anderson, 1974), the landscape of rich woodlands, fens, moors, and bogs that characterized ‘Olde Merrie’ England, was beginning to bear resemblance to the nightmare that Sir Thomas More illustrates in *Utopia* (Simmons 2006). More (1516) writes, “Your sheep, that used to be so meek and eat so little. Now they are becoming so greedy and wild that they devour men themselves, as I hear. They devastate and pillage fields, houses, and towns” (p. 14). The peasants were becoming subsumed under the growth of wool production. While it is true that More finished his *Utopia* in 1516, historically this literary passage encapsulated what continued to happen well up until the 17th century; arable land being overtaken for pasturage. The deeper reason for illustrating this unique metabolic relation between sheep and English society is to illuminate the way in which shepherding on a small scale creates a lively landscape with the potential for ecological diversity, but that as

production intensifies and expands into new domains, it has the potential to rupture the qualitative balance.²¹

With the rise and fall of English dominance in wool production, we see this relationship between sheep and English society expand to a point that it comes into contradiction with its conditions and eventually dissolves from its antagonisms. Following the development of the English wool Staple portrays this point more than anywhere else. Since as early as the year 1294, it can be estimated that the English wool Staple had existed, serving as a central hub for the distribution and sale of exported wool (Power, 1987). As shown in the previous chapter, however, during the 15th century we see the beginning of relatively insecure property relations amongst the peasantry. Insecure not in the sense that the land would be stolen from underneath them, but rather that the traditional form of landholding was transforming. As pasturage came to replace both arable and woodland area, and as the peasantries relationship to the lords became unsteady, what we see is the movement away from a relationship founded upon use-values and one mediated and eventually dominated by exchange-relations.²² As stated in the previous chapter, by the 15th century we are beginning to see the dominance of money

²¹ Marx (1977), invoking Hegel, grasps this movement from quantitative intensification to qualitative transformation when he states, “Here, as in the natural science, is shown the correctness of the law discovered by Hegel, in his *Logic*, that at a certain point merely quantitative differences pass over by a dialectical inversion into qualitative distinctions” (p. 423).

²² Gregg (1976) expresses this point well in stating, “The substitution of the export of woollen cloth for the export of raw wool in no way discouraged sheep-breeding. On the contrary, in the course of the fifteenth century it became clear that a move to pasture was accelerating, and by the turn of the century sheep-farmers everywhere, from the big estates to the little one-man holdings, were increasing the number of their sheep” (p. 159).

rents as opposed to rent-in-kind, and while this may seem ancillary, it is fundamental to understanding the growing dominance of sheep, and specifically, wool (Hilton, 1973).

A great deal of importance has been placed on the historical movement away from rent-in-kind towards money rents, yet it must be made abundantly clear that money on its own does not transform the relationship, it is once it becomes marketized that it alters the relation between peasant and lord. However, what money does do is it inverts and mystifies the relationship between subjects and objects in the world. Although the passage is quite long, Marx (1988) expresses this point wonderfully when he asserts that:

If money is the bond binding me to *human life*, binding society to me, binding me and nature and man, is not money the bond of all *bonds*? Can it not dissolve and bind all ties? Is it not, therefore, the universal *agent of divorce*? It is the true agent of divorce as well as the true binding agent—the [universal] *galvano-chemical* power of Society. Shakespeare stresses especially two properties of money: (1) It is the visible divinity—the transformation of all human and natural properties into their contraries, the universal confounding and overturning of things: it makes brothers of impossibilities. (2) It is the common whore, the common pimp of people and nation...Being the external, common medium and faculty for turning an image into reality and reality into a mere image (a faculty not springing from man as man or from human society as society), money transforms the real essential powers of man and nature into what are merely abstract concepts and therefore imperfections—into tormenting chimeras—just as it transforms real imperfections and chimeras—essential powers which are really impotent, which exist only in the imagination of the individual—into real powers and faculties. In the light of this characteristic alone, money is thus the general overturning of individualities which turns them into their contrary and adds contradictory attributes to their attributes. Money, then appears as this overturning power both against the individual and against the bonds of society, etc., which claim to be essences in themselves...Since money, as the existing and active concept of value, confounds and exchanges all things, it is the general confounding of all things—the world upside-down—the confounding and compounding of all natural and human qualities. (p. 138-140)

In this passage, Marx is being dramatic in his articulation of this point, however, the point he is making is apparent: that money in its mediation between things can, but need not, alter their relationship. For Marx, it is not that money is inherently mystifying, but rather that when money becomes more adequate to its concept as the universal equivalent of exchange, it begins to take on characteristics greater than simply serving as a mediator; it becomes the 'god' amongst other objects. While money serves as an exchange-value between things, it therefore, cannot be anything disconnected from the things it is equivalent to. The error arises when those who use the money forget that it is simply a quantitative equivalent between objects. It can appear to take on a life of its own.

In the case of money-rents in feudal England, an inversion of the relationships between money and objects occurs. Once money-rents become the dominant form of surplus extraction, the land begins to appear only as an exchange-relation as opposed simply a relation of use. In this relationship with land, there arises an opportunity for accumulation of wealth, due in part to the newfound relationship between peasant, lord, and the land founded upon market imperatives. While before, the relationship between the peasant and lord bore a resemblance to that of simple commodity exchange between peasant and lord, it took on a new the resemblance of Peasant-Money-Lord with the inclusion of money rents. It is not that before this point a relationship with the land was not present, but rather that with the inclusion of money rents in the relationship it opens an opportunity to act as though the land and the peasant were not always connected. Money can stand in between the two and act as mediator. Money has the capacity to separate, or abstract, what is fundamentally a direct relationship. This is not altogether

destructive because as we know C-M-C is something that can potentially occur *ad infinitum* without rupturing their relationship. With this in mind, we then can begin to see that the relation can also take on the form of M-C-M-C, simply a different and extended moment in the movement. By inserting money between the peasant and the lord, we see it act as a mediator between them, but we also see products change hands. In the exchanging of products, there is also money being circulated. In this movement, we can begin to see money transforming itself into more money through the land. By simply allowing for land, i.e. property, to act as an exchange-value, it loses its particularity as an object in use and becomes simply an object in semi-abstraction. Hence, the relation between lord and peasant becomes mediated by an exchange-value that can eventually come to dominate the relationship between the two subjects: lord and peasant alike.²³ But what does this mean in terms of understanding the ecological contradictions of English sheepherding?

This movement towards money-rents and production for exchange, given an intense enough degree of production of wool, in the end, undermines the ability for the peasant to maintain a simple use-relation with the land. This is due to the slowly growing imperative placed upon the peasant to either produce more money-wealth out of the soil in the form of agricultural products or to transform the land over to pasturage for sheep. Put most aptly by the economic historian R.H. Tawney (1967), when he expresses that, “If the expansion of the woollen industry offered a fortune to those who adopted the new

²³ This point is not taken up explicitly by Marc Bloch (1969), however, in *Land and Work in Mediaeval Europe: Selected Papers*, he hints at this point in his chapter titled “A Pseudo-Dilemma” where he examines how exchange-relations transcend silver and gold historically but are still mediated by exchange and not merely a general moment of surplus extraction.

methods of estate management, the depreciation in the value of money threatened with ruing those who did not” (p. 197). For Tawney (1967) these changes did not emerge from just anywhere. They were the result of complex social and natural rearrangements and increased imperatives placed upon peasants by growing marketization of the means of reproduction. Importantly, they were being done by the landed classes, and Tawney (1967) clarifies the motives underlying these transformations historically:

At the beginning of the sixteenth century forces both political—the restriction of the territorial sovereignty of the landlords—and economic—the growth in the demand for wool—were working to produce a change in the methods of agriculture; and at any rate by the middle of the century another powerful motive was added by the fall in the value of money. The result was that there was a movement in the direction of converting arable land to pasture, and of enclosure, which affected all classes of landholders, but which was carried furthest by the large farmers who leased the demesne lands of manors, who could afford to make experiments, and who were under a strong incentive to turn the land to its most profitable use. (p. 229-230)

The point here is that the transformation of arable land into pasturage was not something seen universally throughout the different rungs of English society. These transformations were specifically the work of the landowners landed classes, and while many economic historians would like to believe these transformations were rapid they were not at their full intensity until nearly the 19th century. These early transformations represent the origin point of a gradual movement towards pasture land overtaking arable land. Most customary tenants, even up until the 18th century, held land that was nearly 90% arable (Tawney, 1967). Yet, on wealthy manors, we see a very different picture. Amongst 41 monasteries we see 51% of all land being characterized as pasture land, and amongst yeoman farmers, we see this number at nearly 70% (Tawney, 1967).

At this point, we can see exactly how the inclusion of money in the English case creates the opportunity to transform the relation with the land.

As has been shown, by the 16th century the wool Staple was in clear decline, though the motion of accumulation and concentration of both land and sheep was stable enough that dissolution was not a real possibility. The reason for this is somewhat simple: sheepherding naturally lends itself to production for exchange.

Both concentration and accumulation of land and livestock are seen, not necessarily in equal degree across England, but there is undoubtedly growth of both throughout. Although there appears to be something within the concept of sheepherding that lends itself to accumulation and concentration, it does not occur without certain specific social relations to reinforce the accumulation and concentration of land or allow for the free movement of these animals through trade. What we do see in the English case in the 15th century is that when one shepherd a flock, the wool of the sheep is not necessarily appropriated by the consumer of that single shepherd who reared the sheep. Instead what we see is production for sale as opposed to production for use (Power, 1987). Therefore, it should be of no surprise that sheepherding for wealth, along with improvements in agriculture, became the two most dominant modes of prosperity amongst the English. While agriculture was often the domain of peasant yeoman, the history of sheepherding is intimately connected with the lordship. As Sir Thomas More (1516) stated, “For in whatever parts of the land the sheep yield the softest and most expensive wool, there the nobility and gentry, yes, and even some abbots though otherwise holy men, are not content with the old rents which the land yielded to their

predecessors” (p. 14). Albeit a work of fiction, there is something highly revealing in this quote from More; that shepherding was consuming the peasantry in the countryside, and in effect, that exchange-value was overtaking use-value in a unique pre-capitalist manner. Sir Thomas More is writing *Utopia* after the decline of English wool, and yet, what he expressed continued to hold up until at least the 17th century.

Shepherding and the selling of wool, for the lord, represented a means of acquiring greater wealth, which essentially meant greater access to land, and in turn, political power. This meant that a decline in either the production or price of English wool meant a decline in the power of the English lordship, and from what we can see historically, the drop was significant during the 15th century. In *Medieval English Wool Trade*, it is stated that “The figures give this result (taking two fairly normal years): 1310-11: Exports 35,509 sacks all in wool (cloth negligible); 1447-8: Exports 21,079 (of which 13,425 are in cloth), that is a drop of 14,500” (Power 1987, p. 137). While many economic historians link the development of the capitalist mode specifically with the growth and expansion of the market, this thesis puts forth the claim that it was the drop-off of exports that played a dominant role in the dissolution of the feudal order. On its own, intensifying wool production does expropriate peasants from their land, but in many ways, it is the historical double movement of growth and then collapse that loosened the peasant from the land (Cantor, 1987).

The result of these historical developments from the 14th through the 17th century is the eventual dissolution of the peasant's relation to the land, specifically, the pasture. Metabolically, the relation connecting the peasant to the lord and the peasant to the land

was not something broken overnight, but was rather the result of a long process of destabilization, often accompanied with the development of new techniques of maintaining ecological vitality.²⁴ However, by the 17th century, what we see is that the peasant was beginning to have a subsidiary role in the relationship to the farming of sheep. The landowner, who had transformed arable or reclaimed woodland into pasturage now came to expropriate peasantry from the land for the production of wool. The peasant was no longer to take their inorganic conditions, i.e. the soil and the sheep, as the ‘workshop of their forces and the domain of their all’. The peasantry at this point needed to find their means of reproduction elsewhere. In this theft, not only are the peasant’s objective capacities thwarted but also their immediate means of existence are torn from underneath them. The creation of a proletariat was in the making and we can see that it was the result of a long historical process of turning peasants into nothing but labour-power that must sell itself on the market each day to be sold anew the next.²⁵

We have brought ourselves to a point in this thesis where the peasantry has been expropriated from the land, unable to reproduce themselves, nevertheless, we have not explained another equally important point in the historical narrative: how the instruments of production are disentangled from the craftsperson.

²⁴ The creation of water-meadows is one of these wonderful achievements that resulted from complex socio-natural relations beginning to undermine themselves. Another proxy to the ecological volatility of the sheep farming system comes through the introduction of both the turnip (from 1580) and clover (1650) which both release nutrients into the soil: a practice that was not seen before the 16th century (Simmons, 2001).

²⁵“These labourers, who must sell themselves piecemeal, are a commodity, like every other article of commerce, and are consequently exposed to all the vicissitudes of competition, to all the fluctuations of the market” (Marx 1988, 216).

4.3 The Rise and Fall of the Guild

To this point, this chapter has focused on shepherding, the fall of the Staple, and the production of raw wool, but we must now focus our attention on textile production and the countryside's relation to the city; in effect, this requires an analysis of the guild system.

It was emphasized in the previous chapter, but it is vital to reiterate the self-sufficient character of both the city and the countryside in the English feudal order. Nevertheless, we must examine an institution that linked the two together—the guild. While guilds took a variety of different forms, some of which were merchant guilds as opposed to craft guilds, the subject of this chapter follows the development of the guilds connected to the cloth industry. Craft guilds from their earliest inception regulated production amongst artisans. This function was not to derive the great surpluses, but rather to ensure stable production amongst many craftspeople. Socially, the guild played a massive role in creating a sense of fraternity amongst craftspeople, and economically, the guild both provided stability to handicraft production and made the city the locus of handicraft production.

In the English case, the wool produced in the countryside was often brought to the city, where it would eventually be transformed into textiles imbued with social usefulness. Yet, without the concentration of power and instruments by the guild, the mass production of wool in the countryside, and its eventual connection with merchant's capital, the possibility for the development of the capitalist mode of production would not have been possible (Marx 1973). In the same way, we could not speak of English wealth

without speaking of shepherding, we cannot speak of the medieval city without speaking of the guild. Therefore, a logical starting point of our examination would be that of the city; the site of the guild and one of the key locations for the production of woolen textiles.

A simple point must be made about English textile production to fully understand the role of wool production in the English case; from the 14th to the 16th century very little woolen cloth woven by English looms was intended for export on the greater continent. The wool sheared from English sheep in a majority of cases went to looms on the European continent, however, that which touched the loom of English weavers more times than not was consumed within England. It is for that reason that the guild does not play a significant role in the development of English money wealth, but rather plays a pivotal role in the concentration of both craftspeople and instruments. From this, we can see how the guild represents a specifically pre-capitalist institution, that in its dissolution, created the conditions for the emergence of capital.

While for centuries the weaving of woolen textiles occurred within the home of the peasantry or the workshop of the craftsperson, however, with the creation of the craft guild as early as the 11th or 12th century what we begin to see is consolidation, both in terms of labour and political force, and the instruments of production.²⁶ Outside of the

²⁶ W. J. Ashley (2011) links this movement of both political power and the instruments of production into a single unifying body as something quite revolutionary; “It is true, moreover, that in the fourteenth century it became the policy of the government to extend the guild organization over the whole country, and to bring all craftsmen together in organized bodies. Yet it is clear that guilds came into existence at first quite voluntarily, and that this banding together of the craftsmen was regarded as somewhat revolutionary” (p. 17).

city, and in essence, outside the realm of the power of the guild, the weaving of wool was something done on a small-handicraft basis where the craftsman's home was at one and the same time a workshop and a home.²⁷ In the city, it is not as though this structure was radically different, but with the power of the guild overseeing production, the guild created a structured dynamic that stratified very specific social relations of production within the workshop. Unlike the capitalist, who simply needs wealth to buy the objective conditions of production, the master-journeyman only can move through the ranks of the workshop and guild by mastering their craft. One must begin as an apprentice and work one's way up. The workshop limited the number of craftspeople that could work in a space, and the guild limited the number of apprentices that any single master could have. These are barriers that the development of capital could not allow to continue to exist.

While shepherding represents one stage in the process of production, albeit potentially the most important, it is through the wool's transformation into a textile that the guild becomes important. A hoard of wool is only a textile potentially, and without the application of human labour, it will remain so. That is the reason why in analyzing the economic mode, weavers and shepherds always are dialectically entwined together in a broader social metabolism. Wool must be processed extensively before it can become an object for social use, therefore, the sheep, the craftsman, and the shepherd only

²⁷ There are many reasons why the rise of the factory production radically transforms the feudal home, and potentially the most important is that "Before the introduction of machinery, the spinning and weaving of raw materials was carried on in the working man's home. Wife and daughter spun the yarn that the father wove or that they sold, if he did not work it up himself." (Ashley 2011, 50) While under the feudal mode of production the home sits as the locus of production, under the capitalist mode, production, and specifically, value, are produced outside of the home.

represent different aspects in a larger circuit of production.²⁸ Just as the lord's domain covered the production of agricultural goods and wool in a raw form, the guild ensured a particular form of production, specifically, handicraft workshop production. The guild acted as a mediator of the application of labour during the period from the 12th to the 17th century, until its slow dissolution in the 18th century, but to avoid jumping extensively through history, we will start at the beginning of this narrative—the 14th century.

During the time of Chaucer (1340s-1400 C.E.), the power and wealth of the guild were unrivaled. To be a member of the guild was of utmost importance both socially as well as economically, and while it may only be a literary example, a few lines from Chaucer's (1476) *The Canterbury Tales*, written during the 14th century, may illustrate the somewhat restrained opulence of the guild:

A Haberdasher and a Carpenter,
a Weaver, a Dyer, and a Tapestry Maker were with us, too,
all clothed in the same livery—
that of a great and dignified guild.
Their gear was all freshly and newly adorned;
Their knives were mounted not with brass,
but entirely with silver; their belts and their purses were beautifully made in every respect.
Each of them seemed indeed a burgher imposing enough

²⁸ While this thesis examines the relation of the guild to weaving more closely than any other craft, by the 15th century there was a great deal of complexity within the woolen textile production process that extended far beyond weaving on its own. In *The Cambridge History of Textiles Volume I* it is made explicit that, "With the full fruition of those changes by the fifteenth century, the major stages of cloth manufacturing had become the following, in sequence: (1) wool sorting, scouring and preparation, including preliminary wool dyeing; (2) coming and carding ; (3) spinning by the 'rock' and wheel; (4) weaving, on various looms; (5) fulling and tentering; (6) teaselling or napping; (7) shearing; and (8) dyeing or re-dyeing in the piece" (Jenkins 2003, p. 191).

to sit on the dais in a guildhall;
every one of them, because of his wisdom,
was suited to be an alderman,
for they had enough property and income, (p. 19) ²⁹

In the 14th century, the export of wool was at its height. Wealth was being amassed in the hands of the landowners, yet despite this, guilds were functioning as they had for the last two centuries. Two centuries later when the export of wool was in great decline a similar sketch of the guild remained. The guild retained relative stability throughout economically turbulent times in English history, and the ultimate reason for this comes from the fact that guilds focused on the production of finished textiles, and the greater continent's demand was for raw wool and not finished textiles. The influx of wealth may have seen its way in the guilds but did not alter the inherent structure of the guild; master craftsmen uniting together for the sake of control of production and to ensure a level of craftsmanship.³⁰ Even the distinction typical of the guild system between master,

²⁹ An Haberdasher and a Carpenter
A Webbe, A Dyere, and a Tapicer,
Were with us eek, clothed in o liverree
Of a somepne and greet fraternitee.
Ful fresh and newe hir gere apyked was;
Hir knyves were y-chaped noght with bras,
But al with silver; wroght ful clene and weel
Hir girdles and hir pouches every-deel.
Wel semed ech of hem a fair burgeys
To sitten in a yeldhalle on a deys.
Everich, for the wisdom that he can,
Was shaply for to been an alderman;
For catel hadde they ynogh and rente,

³⁰ While it is typical of Enlightenment and post-Enlightenment writers to criticize the function and hierarchical structure of the guild, Lewis Mumford (1934) recognized this dimension of the guild yet does not overlook the fundamental purpose of the guild historically. He states, "The tendency of organization by crafts, regulated in the interests of standardized and efficient work, guaranteed by local monopolies, was on the whole conservative, although in the building crafts, between the tenth and the fifteenth centuries, there were undoubtedly many daring innovators. In the beginning, it was knowledge, skill, experience, that had been the subjects of guild monopoly" (p. 132).

journeyman, and apprentice did not see any major disruptions during these difficult times, yet we know that eventually, this will radically change with the advent of new forms of production. Almost all of these transformations center around how the craftsperson became disconnected from their instruments of production.

While the inclusion of this may appear tangential, this passage from Adam Smith (1776) is included to illustrate both the complexity in the creation of what appears to be nothing more than a commodity found on the market, but also how the instruments of production for Smith were always intertwined with the labourer in production. As Smith (1776) puts it:

The woollen coat, for example, which covers the day-labourer, as coarse and rough as it may appear, is the produce of the joint labour of a great multitude of workmen. The shepherd, the sorter of the wool, the wool-comber or carder, the dyer, the scribbler, the spinner, the weaver, the fuller, the dresser, with many others, must all join their different arts in order to complete even this homely production. How many merchants and carriers, besides, must have been employed in transporting the materials from some of those workmen to others who often live in a very distant part of the country? How much commerce and navigation in particular, how many ship-builders, sailors, sail-makers, rope-makers, must have been employed in order to bring together the different drugs made use of by the dyer, which often come from the remotest corners of the world? What a variety of labour, too, is necessary in order to produce the tools of the meanest of those workmen! To say nothing of such complicated machines as the ship of the sailor, the mill of the fuller, or even the loom of the weaver, let us consider only what a variety of labour is requisite in order to form that very simple machine, the shears with which the shepherd clips the wool. (p.22-23)

The various forms of labour that Smith is describing here bear almost no resemblance to the proletarian labourer forced to sell their hide of the market; instead, what Smith is describing is a craftsperson not only connected to other craftspeople through production but also a craftsperson intimately connected with their instruments. For Smith, those tools

are themselves a product of human labour engaging with the world, and while for Marx they are that and much more, but for both, it seems rather clear that to speak of a craftsperson without their instruments of production is to speak of something incomplete. Specifically, for Marx (1973), only through the loom can labour produce a textile, and only by being connected with the weaver can the wool realize itself as a textile. Historically, the tools of the craftsperson were not something that could ever be disconnected from the immediate being of the craftsperson themselves. Without the loom, the weaver may as well be a painter without hands or a writer without a pen.³¹ The point here is that without the means of production, i.e. instruments, the craftsperson is fundamentally incomplete. They may be a craftsperson potentially, but without their instruments, they will never in actuality act as a craftsperson. A very important point emerges from this discussion, which is that without the hands and feet³², or rather, the instruments of the craftsperson, the textile cannot be properly produced. It is important to see that the rise of large-scale industry was not the result of the invention of steam-power or of mastering of the mechanism of power that allowed for industrial production of

³¹ Marx grasps this when he expresses that, “On the whole, the labourer and his means of production remained closely united, like the snail with its shell, and thus there was wanting the principal basis of manufacture, the separation of the labourer from his means of production, and the conversion of these means into capital.” (Marx 1977, 285)

³² With the invention of the horizontal loom, both the hand and foot were utilized to create a more balanced piece of textile (Jenkins 2003). However, the effect of this transformation was gendered in the sense that it transformed home-weaving from a female-dominated craft into a male-dominated craft. Jenkins (2003) states that “The nature of these industrial and gender relationships (i.e. male patriarchies) can best be explored by examining the next set of transformations involving many, if by no means all, the cloth industries of later medieval western Europe: not only the development of craft guilds, but more particularly the economic and social strife involving those guilds” (p. 222).

textiles, it was by producing technology that could recreate the movement of the human hand that this became possible.³³

Unlike modern industrial capitalism, under the medieval guild system production was done not only on a small-scale, or handicraft level but also was done in the workshop or home of the craftsperson. This workshop or home was controlled by the master-craftsman, and subordinate to this craftsman were several journeyman and apprentices who would be guided through the process of learning the craft (Fornäs, 2013). For Marx, it is not only that production under the guild-system was limited both in production and in the number of producers, or that production occurred within a workshop as opposed to a factory, it is that under the guild-system the instruments of production were always linked with the craftsperson. Nothing truly mediated their relationship to their tools. The craft guild ensured that regardless of the craft, or the structure of the workshop, that the craftsperson's instruments were their own. Part of the structure of the craft guild itself was that those who were part of that specific form of production were identified as having skill with their instrument. As Mumford (1961) emphasizes, the craft guild more than anything else was "an association of masters working up their own products banded together to regulate production and establish standards of fine workmanship" (p. 271). Under the workshop system, and the larger guild system, the master would control the

³³ It was not the development of steam power or the ability to transform of power to the machine that allowed for mass production, but instead, was the result of the ability to recreate the most complex aspect of the labour process: the weaving itself. This point is apparent when we see the immense time necessary to create cloth itself; "Productivity in weaving, at least, did not significantly increase again before the industrial revolution era. According to a report presented to Parliament in the 1780s, weaving a superfine broadcloth of 34 yd (i.e. before fulling), with 70lb of wool (31.8 kg), then required 364 man-hours (=14.5 days, with two men and a body), and a further 888 man-hours in wool preparation, spinning, reeling and warping" (Jenkins 2003, 197).

raw material, the instruments, and would sell their products locally, but there did not exist an intermediary entity between the master and their tools. There did not exist a separation between production and exchange, and while this may sound like the potential for the creation of capital, it was always limited by its capacity and because of the necessary relationship between master and apprentice. For that reason, the master and apprentice relationship began its dissolution once the larger form of the workshop, the manufactory, was able to emerge. The manufactory represents the beginning of a division of labour, and more importantly, a site of loosened guild restrictions. Once the manufactory arose historically, craft production fell beneath the wheels of mass production and led to the complete separation of the instruments of production from the craftsman.³⁴ While the guild brought together instruments and labour into a single domain, it also created the potential for capital to then be able to absorb them both piecemeal.

It is also important to note that the purpose of the workshop under the guild system was never valorization, it was always the fine-tuning of one's craft. The general purpose of the guild was to control production and master workmanship; therefore, it should be of no surprise that the instruments of production being connected to the craftsman were a necessary aspect of the survival of the guild. Without the craftsman, there is no guild, and without the tools being united with the craftsman,

³⁴ Although it seems to be missing from the argument, I would like to reiterate here that although woolen textiles were one of the first industries to utilize water-power in fulling mills, it was not fundamental to its development into industrial style textile production. As Jenkins (2003) states, "The first English fulling mill to be recorded was established at Paxton in Huntingdonshire in 1173, followed in 1185 by two mills of the Knights Templar, at Newsham in Yorkshire and Barton in Gloucestershire (Cotswolds); thereafter, for the thirteenth and fourteenth centuries, various historians and historical geographers have not documented a widespread diffusion of such fulling mills, even in the flatter lowland regions of eastern England" (p. 205).

there is no craftsman. A complete craftsman is at the base of the entire structure. That is the fundamental reason why under handicraft production the guild thrives, and why once handicraft production takes on other forms, we begin to see the guild system dissolve.³⁵

In the development from handicraft production to factory production there is a stage that exists in the middle that paves the way for the latter's development: this is the emergence of the manufactory. While the manufactory does not drastically differ from handicraft production qualitatively, it is in its quantitative intensification that it appears relatively different. Marx (1977) grasps this point when he states that:

With regard to the mode of production itself, manufacture can hardly be distinguished, in its earliest stages, from the handicraft trades of the guilds, except by the greater number of workers simultaneously employed by the same individual capital. It is merely an enlargement of the workshop of the master craftsmen of the guilds (p. 439).

The differences between manufactory and the factory is two-fold, both quantitatively as well as qualitatively. Quantitatively it represents a tremendous jump in both the number of people employed and the amount of production done, and qualitatively, the differences are seen in both the type of labour done and their connection with production. In the factory, labour is subdivided, allowing the division of labour to become adequate to its concept, and all production is completely estranged from the labourer. Both of these

³⁵ For Marx and Engels (1978), the guild system could not have developed into industrial capital, and in turn transform the mode of production, because "The expansion of trade and manufacture accelerated the accumulation of moveable capital, while in the guilds, which were not stimulated to extend their production, natural capital remained stationary or even declined. Trade and manufacture created the big bourgeoisie; in the guilds was concentrated the petty bourgeoisie, which no longer was dominant in the towns as formerly, but had to bow to the might of the great merchants and manufacturers. Hence the decline of the guilds, as soon as they came into contact with manufacture" (p. 146).

developments hinge upon the craftsperson not owning their instruments, i.e. the means of production. It is this separation from the means of production that is the basis for merchant's capital to transform into industrial capital. Pauline Gregg (1976) puts this most clearly when she notes the movement from manufacturing to factory production; "Here is the factory system in embryo: the employer owns the raw material, the instruments of production; the worker owns neither raw material nor instrument, nor does he use his own home. Only his manual skill remains his own" (p. 151). This is the basis for one of the key elements of the capitalist mode of production: wage-labour, however, the rise of the manufactory in the 18th century does not on its own create the capitalist mode of production.

From this developmental story, we begin to see how the rise of capitalism hinged upon the separation of labour from the means of production, or rather, the craftsperson from their instruments. As we can see, this is one of the first steps in the movement towards capitalism, however, the concentration and separation of instruments from craftspeople are not enough to produce the capitalist mode of production. What must also occur is that new production must occur beyond the power of the guild.

In Wilson's (1995) *England's Apprenticeship* it is stated that "Unlike the old urban crafts, the up and coming industries—textiles, metal working and mining—were not located in the narrow streets of the corporate town. They were dispersed widely over villages and countryside" (p. 136). Just as merchant's capital existed in the pores of the medieval period, it is on the fringes of English society, in the countryside, that manufacturing and eventually factory production finds its home. This occurred for a very

specific reason; the power of the guild had its limitations. In the work of Steven Epstein (2008) we can see the power, albeit limited, that the guild held by examining the quote, “For the most part in England, as in the rest of Europe, the jurisdictions of craft guilds stopped at the town or city’s gate or extended only a few miles into its immediate suburbs and hinterland” (p. 288-289). By the late 16th century the guild that had once had great power was dissolving from its contact with manufactories located outside of its realm of influence. These countryside manufactories grew in stature as they absorbed the expropriated peasantry that had been forced into vagabondage from the 15th century onwards (Marx & Engels, 1978). By the 17th century it was clear that the guild’s power was waning, and with its loss of power came the rise of the countryside as the locus of industry. As the great economic historian Lewis Mumford (1961) put it, “If the guild in fact rose with the medieval city, by the same token it fell with it: the guilds were only the city in its economic aspect as the city was the guilds in their social and political aspect” (p. 272). If feudalism is characterized by the relation between city and countryside, it is the urbanization of the countryside that encapsulates the capitalist mode (Marx, 1973).

These two entities, the city and the countryside, that once existed in relative self-sufficient harmony, now find themselves in a struggle between one another. The city is slowly losing its position as a locus of production, while historically stable relations of the countryside are dissolving due to enclosure, and in between these movements comes the development of the manufacture to only apply pressure to both of their dissolutions. This perceived parasitic relationship often attributed to the relation between the city and the countryside, is now seen to be the result of a long historical rupture that occurred as a

result of specific socio-natural relationships culminating in the dominance of exchange-relations in sheepherding and the creation of capitalist preconditions in the dissolution of the guild system.

A great deal of this section has dealt with the rise and fall of the guild system and its importance in understanding the role of wool in the development of capitalism, but we must now ask how the development of these social antagonisms was interlinked with specific ecological transformations.

4.4 Wool as Precondition

While we have seen that in the case of wool the city and the countryside were relatively distinct from one another historically, we must uncover the link that bound them together. At first glance, it would appear as though simple quantitative intensification was what motivated both the rise and fall in the demand of wool and the intensification of handicraft production outside the confines of towns, and in effect guild influence, however, there exists a more primary tendency that more strongly ties them both together; the tendency of abstract redistribution.

We see temporary fixes to the ecological issues of large-scale sheep farming through the development of water meadows, but they all seem to be merely an appendage to the larger issue at hand: the expropriation of the peasants from the land for the sake of wool production. In the manufactories emerging outside the influence of guild power we begin to see the estrangement of the craftsperson from their instruments of production.

Both of these developments encapsulate moments of separation, i.e. abstraction, from the unity of specific feudal relations. The unique role that wool plays in the development of capitalism is that it represents the earliest case of both expropriation as well as the earliest development of capital seeking to transform the mode of production through the concentration of both instruments and labour. As has been reiterated numerous times throughout this thesis, the development of capitalism did not occur until well into the late 18th century; however, we see the earliest germination of capitalist seeds within the development of the woolen textile industry in the English countryside.

4.5 Conclusion

In summary, through the historical development of shepherding we have brought to light the unique ways in which the land, and in effect, the people connected to that land, in the countryside were rearranged with the growth of English wool. This process of expropriation was codeveloping alongside the development of industrial style agriculture, and the end result was a peasantry ripped from the land in both cases. In this same process of disappropriation, we see the rise and fall of the guild system consolidate craftspeople and instruments into a single domain, creating one of the necessary preconditions for the emergence of industrial capital. These codeveloping processes occurring in agriculture and shepherding as well as the city and countryside, set in motion the ‘freeing’ of labour from the lord as well as the land.

To this point in the thesis we have only dealt with the preconditions of the capitalist mode³⁶; however, in the 18th century, we see the rise of one of the greatest embodiments of the capitalist mode of production: the subterranean mine. In the next chapter, we will discuss the movement from surface mining to subterranean mining, and how it stands as an epoch-making moment in the transition from feudalism to capitalism.

³⁶ Albeit not the object of this thesis, it must be pointed out that during the period being examined (the 14th through the 18th centuries), we see the rise of colonial expansion, the plundering of natural resources, the growing use of slavery as a means of labour, and ultimately, the disruption of ecological and social metabolisms across the globe. These transformations represent the ‘external’ realm of the capitalist mode of production, or as it should be called the frontier of ‘Primitive Accumulation’, and as the world was being overtaken through colonial conquest, the internality of this system; the peasantry throughout the British Isles, were forced to cope with the ‘internal’ regime of the capitalist mode of production.

Chapter 5: The Birth of the Subterranean Mine

5.1 The History of Mining Globally

Before any real analysis of the particular character of English mining is undertaken, we must first begin by placing the history of mining as a practice in a broader context.

While contemporary social consciousness tends to evoke images of the deep cavernous mine, buried beneath the earth, hundreds, if not thousands, of feet below the ground, in the ancient and medieval world, this caricature of the mine does not hold. For thousands of years mines have been worked across the globe, and yet they did not bear any resemblance to this form. Mining has been a practice done on the surface of the earth far longer than it has occurred on a subterranean plane. Throughout history, mining has been a practice done no more than a couple of dozen fathoms³⁷ below the earth's surface. Mines were always limited in their depth by the ability of labour to either haul water out. For most of history open-pit mining has been the predominant mode of mineral extraction, and even in rare cases where mines extended in greater depth below the

³⁷ Fathom is the term typically referred both to water depth as well as to mining and indicates a measure of six feet.

Earth³⁸, it was always the result of natural geological formations and its ability for ‘self-removal’ of water from the mine.

While the surface mine may not appear quite as hideous as its contemporary counterpart, it certainly was a disdainful aspect in the ancient world. This begins to change in the medieval period, but to illustrate this point let us catalog several key quotations from Georgius Agricola’s (1556) commentary on the ancient world and mining:

Iron is used not only in hand to hand fighting, but also to form the winged missiles of war, sometimes for hurling engines, sometimes for lances, sometimes even for arrows. I look upon it as the most deadly fruit of human ingenuity. For to bring Death to men more quickly we have given wings to iron and taught it to fly. —Pliny (p. 11)

He breaks all law; he murders Polydorus, and obtains gold by violence. To what wilt thou not drive mortal hearts, thou accursed hunger for gold? —Virgil (p. 16)

I hate gold. It has often impelled many people to many wrong acts. —Diphilus (p. 10)

This is indeed the Golden Age. The greatest rewards come from gold; by gold love is won; by gold faith is destroyed; by gold is justice brought; the law follows the track of gold, while modesty will soon follow it when law is gone. — Propertius (p. 10)

And not only was the rich soil required to furnish corn and due sustenance, but men even descended into the entrails of the earth, and they dug up riches, those incentives to vice, which the earth had hidden and had removed to the Stygian shades. Then destructive iron came forth, and gold, more destructive than iron; then war came forth. —Ovid (p. 7)

Copper and gold and iron were discovered, and at the same time weighty silver and the substance of lead, when fire had burned up vast forests on the great hills, either by a discharge of heaven's lightning, or else because, when men were

³⁸ As stated by Galloway (1886), “In the beginning of the eighteenth century the common depth of the mine shafts in the North of England was from twenty to thirty fathoms, but a few had attained to depths of fifty or sixty fathoms” (p. 76), but by the 19th century far greater depths were being explored.

waging war with one another, forest fires had carried fire among the enemy in order to strike terror to them, or because, attracted by the goodness of the soil, they wished to clear rich fields and bring the country into pasture, or else to destroy wild beasts and enrich themselves with the game; for hunting with pitfalls and with fire came into use before the practice of enclosing the wood with toils and rousing the game with dogs. Whatever the fact is, from whatever cause the heat of flame had swallowed up the forests with a frightful crackling from their very roots, and had thoroughly baked the earth with fire, there would run from the boiling veins and collect into the hollows of the grounds a stream of silver and gold, as well as of copper and lead.—Lucretius (p. 36-37)

It would not be an overstatement to say that the mine, although important in the ancient world, was looked at with extreme caution. With the mine came both unimaginable riches as well as the capacity for the destruction of landscapes and virtuous individuals alike. Above we can see the common thread of warfare, greed, and death being interwoven with both the mine and the minerals unearthed from the mine, and quite honestly, it is for good reason that these are all linked to one another. While minerals have been historically connected to craftsmanship, they have also unequivocally been coopted with the development of weaponry, colonial expansion, and in general, the destruction of woodlands, which have been a historical refuge for people throughout history.³⁹ Juridically the mine may appear as a non-violent entity, but we must not forget the violence that mining has historically iterated. The earliest accounts of labour in mines is always that of slaves. Historically, people did not choose to enter the mine on their own accord; it was always forced upon them by the implication of violence. This statement holds until the advent of the capitalist mode of production when specific economic

³⁹ During the medieval period, there are a plethora of mythological motifs linking refuge and the forest to one another, and without creating an exhausting list, a few of these tales would be that of Robin Hood, Sir Gawain and the Green Knight, and Snow White and the Seven Dwarves.

imperatives are placed upon peasants and vagabonds to enter the mine for a wage. This will be discussed later in this chapter at greater length.

The point here is that in the ancient world the mine was an ancillary aspect of production. While the products of the mine in their finished form may take on the appearance of beauty, in the ancient world, the act of labour going into this particular form of production was neither craft nor art.⁴⁰ The result of the labour in creating beautiful jewelry or emblazoned ornamentations may be wonderful, however, if the labour process itself was destructive, then its product could not have been fully artistic. This is not the only reason why the societies throughout history have been hesitant to enter the mine; labour connected to the mine is recognized throughout different groups of people in history as fundamentally dangerous. A few examples throughout history may suffice. In ancient Egypt, there is the god of smithing, Ptah, who is depicted as a dwarf deformed from his craft. In ancient Greece, there is Hephaestus, who is cast from Mount Olympus by Hera for his ‘deformity’. There is also Kagutschuhi in Japanese folklore, who burnt his mother to death in his birth through his extreme heat. Kagutschuhi is born on the last day of the making of the cosmos and marks the beginning of death in the world. In contemporary thought, the mythology associated with Nordic dwarves most aptly characterizes the perilous nature of smithing and the mine. All of these different

⁴⁰ Aristotle, in his discourse on art, states, “All art (*techne*) is concerned with coming into being, i.e., with contriving and considering how something may come into being which is capable of either being or not being, and whose origin is in the maker and not in the thing made; for art (*techne*) is concerned neither with things that are, or come into being, by necessity, nor with things that do so in accordance with nature. Making and acting being different, art (*techne*) must be a matter of making, not of acting.” (p. 1025) In the case of the mine, its result is always the pulverization of the earth, as opposed to a creation or making of the world in a different form.

mythological narratives illuminate the historically perverse nature of the mine, yet we must seek to understand what happens in feudal England that alters this disposition.

5.2 England: A Land of Plenty

By the 17th century the mine and metalworking had a high level of importance in the English social order (Gregg, 1976). While mining, of a higher technical phase, begins on the continent, most likely in the mines of what today is Germany, a new epoch is born not in Germany, but on what Herodotus calls *Cassiterides*, the Tin Islands, or rather, England.

In England, recorded mining can be seen as early as Roman Britain, and as was stated previously, only realized on a surface level. That is until the advent of coal and iron mining. Historically, England is a rather unusual place due in part to its peculiar ecological character. England is one of the few places in the world that has at one point or another been considered a woodland nation, a pasture nation, a cultivated nation, and a mineral-rich nation. While many minerals are important in understanding the development of mining, none prove more vital than coal in the English case. The earliest inklings of the using of coal were seen always in the form of sea-coal as opposed to what is typically called 'earth-coal'. Sea-coal is unique in the fact that it is found in open seams near the surface of the earth usually near coastlines. Hence, the name 'sea'-coal. Between the 14th and the 17th century, sea-coal was a subsidiary source of fuel throughout English society. Wood reigned supreme, both for its abundance and for its proximity to

production, and besides areas in Ireland and Scotland where peat was used as a source for fuel for a vast majority of history, wood was the material of society (Mumford, 1934).

However, as was stated in Chapter 3, the 17th century was a politically and socially volatile time in English history. In a single century, we see the English Civil War (1642-1651 C.E.), the birth of colonial England, the rise of Cromwell's Commonwealth (1653-1659 C.E.), the restoration of the English Monarchy with Charles II (1660 C.E.), and finally the Glorious Revolution (1688 C.E.), all of which sought to consolidate power and resources into the hands of a few (Jenkins, 2011). With both political and economic turmoil came a greater need to appropriate resources, and in this case, that meant both the appropriation of timber as well as mineral deposits. Before the 17th century, woodlands were for the most part held in common by the people of the land. Woodlands provided fuel for the hearths of peasant's homes, aided in the making of charcoal for smiths, and gave physical structure to the great manors (Perlin, 1989). Nevertheless, by the time of James I (1556-1625 C.E.) the woodlands were shrinking quickly. With vagabondage becoming common (Hammond & Hammond, 1911), and industry in the form of weapon-crafting, shipbuilding, and general charcoal production, increasing, the woodlands felt the burden of the 17th century as great as it ever had.⁴¹ At one point during the 16th century, the burning of sea-coal was prohibited within the limits of London, yet by the 17th

⁴¹ We see in W. G. Hoskins (1955) seminal text, *The Making of the English Landscape*, a careful examination of deforestation throughout the history of the English isles. Hoskins (1955) estimates that by the writing of the Domesday Book in 1086, that only 10-15% of forests remained, and that by the 18th century, this number was closer to 4%. Deforestation is not a recent development in the history of human societies, however, through the dissolution of the feudal order, the life of the forest dwindled at an alarming rate.

century, these prohibitions had vanished. But what could be the reason for this drastic shift?

The answer is somewhat simple: sea-coal had become more abundant than wood itself. Sea-coal was quickly replacing wood as the fuel of choice for reasons of scarcity, and in fact, early in the reign of King James I, he issued a proclamation asserting that “Timber is not to be used as fire-wood [and] . . .no new house to be built within a mile of the suburbs [of London] except [if] the walls and windows and forefront be made of brick or brick and stone” (Perlin 1989, p. 193). Wood was certainly still in use, but it is abundantly clear that given the prevailing circumstances, wood had been overtaken by sea-coal (Galloway 1882, p.24-25). Nevertheless, all ‘good’ things must come to an end; all that is solid must melt into air, and in the case of sea-coal, its exit came nearly as soon as its entrance.

The need for coal and other minerals were only increasing as the woodlands shrank (Hoskins, 1976), and the fundamental contradiction in mining was becoming ever apparent: as you delve deeper into the mine it becomes increasingly difficult to secure minerals. One must either delve deeper to find new sources of minerals or one must abandon the mine and search for new deposits. Just as with the world conqueror who upon the finding a new land finds only a new border to be absorbed, this is the case for the controller of the mine. In the words of Lewis Mumford (1961), “mines as a rule pass quickly from riches to exhaustion, from exhaustion to desertion, often within a few generations. Mining thus presents the very image of human discontinuity, here today and gone tomorrow, now feverish with gain, now depleted and vacant” (p. 451). Sea-coal, by

the beginning of the 17th century, was already projected to run out before the year 1650.⁴² These ecological and social antagonisms forced further exploration into the bowels of the earth, however, for the moment we must halt our discussion to examine a few of the conditions for these transformations: the eventual dissatisfaction with wind-power, the blast furnace, and the rise of the steam-powered pump.

5.3 Technology: Internal and External Developments

The textile industries of the 18th century realized expanded levels of production, but not as a result of the development of the steam engine, but rather due to the harnessing of wind and waterpower (Mumford, 1934). Mining, until the 18th century had a very similar character. Through the 17th century, the methods of mining involved complex architectural arrangements to ensure the structure of the mine itself, but the methods for extraction and distribution were always that of hand and horse. As Galloway (1882) states:

The miner's tools consisted of the pick, the hammer and wedge, and the wooden shovel. The only machine in common use was the windlass for raising the buckets of baskets of coal in the shaft; and in the collieries in the east of Scotland even the windlass was unknown, the coals being carried up stairs in the shafts on the backs of women termed "coal-bearers." Above ground the produce was conveyed away

⁴² Galloway (1882) makes this point abundantly clear when he states, "The miners, no less than the smelters, had their difficulties during the seventeenth century, but of a totally different kind; for while the latter were suffering from too little fire, the former were embarrassed by too much water. So long as the demand for coal was small, and supplies were obtainable from shallow mines above the level of free-drainage, the mining of coal had been comparatively easy. But about the beginning of the seventeenth century, this happy state of matters coming to an end. A great demand for coal had sprung up. Much of the most easily available coal had already been exhausted. To carry the workings down into the region below the level of free-drainage was at the time deemed impracticable. To procure sufficient coal from the previous sources was impossible. Hence the exhaustion of the coal supply was considered to be already within sight. In 1610, Sir George Selby informed Parliament that the coal mines at Newcastle would not last for the term of their leases of twenty-one years" (p. 52-53).

from the mine either in ordinary wains, or in panniers on horseback, both methods being in common use. (p. 27)

When we do begin to see the horse replaced by other means of power, the preferred method was almost always that of water or wind. In 1630, the first patent for a steam-engine came into existence, and in 1695, the first patent for the atmospheric steam engine; the preferred engine for mining, came into being, and yet water and wind continued to be preferred. A contemporary reader saturated in a world of combustion engines would hear this and think it absurd, but up until even the 19th century, this statement held. 19th-century water-turbines and windmills, on the whole, tended to produce more power than any steam engine of the time. Mumford (1934) notes that:

the first prime mover to exceed the poor five or ten percent efficiency of the early steam engines was Fourneyron's water-turbine, a further development of the Baroque spoonwheel, perfected in 1832. By the middle of the nineteenth century water-turbines of 500 H.P. had been built. Plainly, the modern industrial revolution would have come into existence and gone on steadily had not a ton of coal been dug in England, and had not a new iron mine been opened. (p.118)

Mumford is making a truly remarkable point here in stating that the modern industrial revolution regressed in its linking with the mine. To think of the industrial revolution devoid of the technology of the mine or the products of the mine seems like a contradictory remark to the average reader of Western history; however, for Mumford these two movements—industrial revolution and mineral extraction—are antagonistic to one another. It is from Mumford's remark that we must explore in detail what specifically led to the historical path that connected these two processes. To do this, we must turn to another technological development outside of the mine—the creation of the high-powered blast-furnace.

Blast furnaces have been an invention dating as far back as the 1st century yet only are commonly seen in use across Europe as early as the 11th century. While the workings of the blast-furnace are fascinating, the important aspect to be noted is that the finished product coming from the furnace is always dependent upon the amount of heat applied to the mineral. Without sufficient heat applied to iron ore, the result is necessarily pig iron, a form of iron with higher carbon content and a lower melting point. It is in the 18th century that something peculiar happens that transforms both the development and the history of metal-crafting significantly. Up until the late 17th-century charcoal remained the source of heat for blast-furnaces, but in the 18th-century the application of coal to the typical blast furnace produced something new: the high-powered blast furnace.

While the high-powered blast furnace may appear as simply a quantitative intensification of the same method of production, and it certainly is, it yielded qualitatively different results. Due in part to the physical characteristics of iron ore, and the carbon stored within it, this new application of intensified heat yielded qualitatively different iron—wrought iron. From this development, we see that both wood and its byproduct often used in metalworking, i.e. charcoal, become energy sources of the past.

Charcoal-making was an important practice throughout English history, yet as woodlands dwindled in size and the price of wood shot up drastically, the movement towards sea-coal became popular (Simmons, 2001). The result of this historical development was the high-powered blast furnace. This feat began with Dud Dudley in the 17th century, and “was successfully accomplished by the Quaker, Abraham Darby, in

1709. By that invention the high powered blast furnace became possible” (Mumford 1934, p. 156). The creation of the high-powered blast furnace set into motion one of the most destructive feedback loops in human history: iron production and coal mining. With greater iron production came a greater need for coal, and with that came an increased need for energy to delve deeper into the mine, hence, greater amounts of coal. These movements destructively reinforced one another. Without the creation of the blast-furnace, a byproduct of the application of coal, it must be wondered if continued exploration into the mine would have continued, but that will not be further discussed here. To return to the present discussion, not only did the mine need labour to excavate within it, but it also needed technology both to expand itself and to process the products of its excavation. The development of the high-powered blast furnace allowed for the processing of the minerals from the mine, but it needed a counterpart: the steam-engine.

Although Galloway is undoubtedly an apologist for the history of mining, he provides us with an interesting insight on this drive towards steam power. Galloway (1882) states that “Windmills were erected at several collieries, but though they were powerful their action was found to be too intermittent; the mines being drowned and all the workmen thrown idle during long periods of calm weather” (p. 78). What we see in the integration of the steam-engine is the imperative of production placed upon the mine from broader social relations happening across the English nation. The mine, and the

practices associated with it, were beginning to ignore both the current income of energy as well as the natural rhythms of natural processes.⁴³

It is not be fully elaborated here, but one of the fundamental dimensions seen in both the production of wool and agriculture, but not seen in the mine, is a sense of organic rhythm.⁴⁴ In the same way, nature pulsates, whether this is in the form of seasonality, the periodicity of the day and night, or in the consumption and production seen in living organisms, it appears to dissolve away with the advent of steam-power being used in the mine. The capitalist drive to accumulate, as we can see, bears a similar resemblance to this movement. What for Marx is the movement from (M) to (M'), and (M') to (M'')*ad infinitum*. This desire did not emerge *ex nihilo*, it was the result of direct imperatives placed upon labour, and it culminates in the movement towards the capitalist mode of production. Marx (1977) grasps this inorganic and abstract nature of the mine in his chapter on “Machinery and Large-Scale Industry” when he states:

If machinery is the most powerful means of raising the productivity of labour, i.e. of shortening the working time needed to produce a commodity, it is also, as a repository of capital, the most powerful means of lengthening the working day beyond all natural limits in those industries first directly seized on by it. It creates, on the one hand, new conditions which permit capital to give free rein to this tendency, and on the other hand, new incentives which whet its insatiable appetite for the labour of others. In the first place, in machinery the motion and activity of

⁴³ The great religious studies scholar Mircea Eliade (1962) grasps the inorganic nature of the products of the mine, by expressing “And so, like the alchemists, the smelters and smiths, too, were ‘masters of fire’. All, by aiding the work of Nature, accelerated the tempo of things and, in the final instance, were substitutes for Time itself. The alchemists were not of course all aware that their ‘work’ did the work of Time. But this is not important: the essential point is that their work, transmutation, involved, in one form or another, the elimination of Time” (p. 171).

⁴⁴ While not specifically referring to the mine or the English case, Jacques Le Goff’s (1980) account of labor time in medieval Europe is encapsulated well in the statement, “On the whole, labor time was still the time of an economy dominated by agrarian rhythms, free of haste, careless of exactitude, unconcerned by productivity” (p.44).

the instrument of labour asserts its independence *vis-à-vis* the worker. The instrument of labour now becomes an industrial form of perpetual motion. It would go on producing for ever, if it did not come up against natural limits in the shape of the weak bodies and the strong wills of its human assistants. (p. 526)

While Marx is describing the factory, what he is describing could be said equally of the mine. The mine is the dream of the capitalist: it is perpetual production for the sake of production. The minerals that leave the mine do not matter, only that they can be transformed into wealth, and that wealth can be integrated directly into production for more wealth. The mine destroys labour in the same unremitting way that the factory does.⁴⁵ It is from the mine that a truly capitalist logic begins to emerge, and from what we can see, these developments emerge out of specific social arrangements, relations of production, instruments of production, and ecological imperatives. We must now scrutinize the link between the locus of the mine, i.e. the woodland, and production; this is where the importance of the railroad fits into the historical narrative.

5.4 The Destruction of the Woodlands and the Rise of Railways

In one of the greatest treatises on mining in history, *De Re Metallica* (1556), only first published in English in 1912, we can unearth one of the earliest accounts of medieval mining in its complexity. From this text, we can ascertain that mining took on many different forms, all of which were heavily dependent on the environment in which the mine was enmeshed. While the tools utilized within the mine may vary significantly

⁴⁵ “Factory work exhausts the nervous system to the uttermost; at the same time it does away with the many-sided play of the muscles, and confiscates every atom of freedom, both in bodily and in intellectual activity. Even the lightening of the labour becomes an instrument of torture, since the machine does not free the worker from the work, but rather deprives the work itself of all content” (Marx 1977, p. 548).

and the power exploited may differ, one thing is certain: the mine must have a relation with the woodland. As Agricola (1556) expresses quite clearly:

With regard to the conditions of the locality the miner should not contemplate mining without considering whether the place be covered with trees or is bare. If it be a wooded place, he who digs there has this advantage, besides others, that there will be an abundant supply of wood for his underground timbering, his machinery, buildings, smelting, and other necessities. If there is no forest he should not mine there. (p. 41)

While there is undoubtedly a relationship between the forest and the mine, it is a relation of asymmetrical dependence and should be thought of as parasitic. There is nothing within the mine that the forest needs, yet the mine must destroy the forest in order to realize itself. In the mine's consummation with the forest, the trees become logged, the soil upturned, and the waters befouled (Simmons, 2001). The destruction of the woodland is due in part to the ecologically destructive nature of the practice of mining itself, but also is the result of the need to circulate the minerals away from the mine itself.

As was stated previously, mining on a small-scale has happened throughout a great deal of recent human history; however, the mine expands only when its products can be distributed widely. For that reason, the growth of mining is linked with the growth of the railway. It is from the mine that all railway tracks emanate from. The origin of the railway comes from Germany, as opposed to England; however, it is in England that we see the movement towards iron rail instead of wooden rails as early as 1716 (Mumford, 1934). Wherever the railway went, the woodlands surrounding the mine disappeared and never reappeared. Railways connected cities across England to the mine with its transportation of coal. It is for this reason that Mumford (1934) says that "The nineteenth

century town became in effect—and indeed in appearance—an extension of the coal mine” (p. 159). In essence, the railway allowed the mine to be everted. The inside of the mine—soot, ash, and noxious gases—became the environment of the world outside of the mine, and as the steam engine⁴⁶ became the prime mover of coal across England, it extended the hellish nightmare farther than was ever imagined.⁴⁷

To this point we have explained the technological achievements connected with the mine, its relation to the greater ecological environment, and how its products are connected to a world outside of the mine, however, we now must examine the role of labour in the mine.

5.5 Wage-Labour and the Subterranean Mine: A New Epoch is Born

Before the 19th century, it must be understood that those who mined in England were almost always bonded to their masters. In the case of Scotland, this was formalized by the 1606 Act which bound miners to a master, and this was formally abolished in 1775 by Parliament because under the 1616 Act vagabonds and peasants alike could be forced

⁴⁶ “And steam-engines were the product of the mines: in 1769 a hundred ‘atmospheric engines’ had already been erected round Newcastle-on-Tyne, and fifty-seven were actually at work” (Hobsbawm 1968, p.47).

⁴⁷ In one of the greatest short stories encapsulating the secondary role that labour plays to machinery under capitalism, Herman Melville (1952) states in *The Tartarus of Maids*, “In one corner stood some huge frame of ponderous iron, with a vertical thing like a piston periodically rising and falling upon a heavy wooden block. Before it—its tame minister—stood a tall girl, feeding the iron animal with half-quires of rose-hued note-paper which, at every downward dab of the piston-like machine, received in the corner the impress of a wreath of roses. I looked from the rosy paper to the pallid check, but said nothing. Seated before a long apparatus, strung with long, slender strings like any harp, another girl was feeding it with foolscap sheets which, so soon as they curiously traveled from her on the cords, were withdrawn at the opposite end of the machine by a second girl. They came to the first girl blank; they went to the second girl ruled” (p. 201).

into servitude, in essence putting coal miners in a state of slavery (Duckham, 1969). As we know from previous chapters, as vagabondage became prevalent across the countryside, textiles manufactories absorbed a great deal of labour, but we can now see that mining also expanded through the expulsion of the peasant from the land. The 1775 Act of Parliament, which sought to ‘liberate’ the miner, however, did not radically alter the relationship. It was not until a second act in 1799 was enacted that we see this relationship of forced labour disappear, and in its place what we see is the need to grant labour a wage. While the 1799 Act granted the miner more freedom, it strategically included a limitation in organizing labour (Duckham, 1969). In dissolving this form of enforced labour, Parliament in effect replaced this relationship with a relation of wage-labour.

By the 19th century, the violent and political force that always impelled bodies into the mine had appeared to cease, and in its place was the wage-relation between the owner of the mine and worker of the mine (Weber, 1927). No longer were the implications of violence necessary to force labour into the mine, instead imperatives to sell one’s labour for a wage became the new great facilitator of labour (Wood, 1999).

The owner of the land, the owner of the tracks leading from the mine to the city, the owner of money, and the forces underlying production, have now through a historic process converged to create a proto capitalist. This controller of the mine does not create many of these objective conditions, but rather these conditions all converge on the mine

in unique ways.⁴⁸ In the dissolution of the feudal mode, instruments, labour, the immediate means of consumption, and money-wealth can become intertwined together, and labour can be purchased for money-wealth which is imperative for labour to reproduce itself (Marx, 1973). It is historically known that the capitalist mode finds its origins within the realm of textile production; however, what we find in the historical development of mining is the slightly earlier origin point of this relation. While in textile production, capital can unite with immediate production, it is in mining that the raw materials underlying production can be appropriated (Weber, 1927). The mine owner is unable to transform the mode of production, due in part to the inability to create surplus-value, however, without the development of this proto-capitalist, the intersection of all of the pre-conditions of both capital and wage-labour would not have become possible. As Marx (1977) states in Chapter 31 of *Capital*, titled “The Genesis of the Industrial Capitalist”:

The discovery of gold and silver in America, the extirpation enslavement and entombment in mines of the indigenous population of that continent, the beginnings of the conquest and plunder of India, and the conversion of Africa into a preserve for the commercial hunting of blackskins, are all things which characterize the dawn of the era of capitalist production. These idyllic proceedings are the chief moments of primitive accumulation. (p. 915)

The sun is slowly rising in a capitalist world, and the birth of subterranean mine is there on the morning of its arrival. A new epoch is being born, and as Marx (1977) states,

⁴⁸ “Capital does not create the objective conditions of labour. Rather, its original formation is that, through the historic process of the dissolution of the old mode of production, value, existing as money-wealth is enabled, on one side, to buy the objective conditions of labour; on the other side, to exchange money for the living labour of the workers who have been set free. All these moments are present; their divorce is itself a historic process, a process of dissolution, and it is the latter which enables money to transform itself into capital” (Marx 1973, p. 507).

“Modern society, which already in its infancy had pulled Pluto by the hair of his head from the bowels of the earth, greets gold as its Holy Grail, as the glittering incarnation of its innermost principle of life” (p. 230). A new capitalist world is being born from the womb of the subterranean mine, and with it, comes a new ecology between humans and nature.

5.6 A Capitalist Ecology Emerges

It is not difficult to see how capitalist ecology transformed and continues to transform our world. The capitalist mode has come to rearrange our world in ways never before imagined, at times bringing to life potentialities slumbering in nature, yet for the most part, creating irreparable incongruities with natural processes (Moore, 2015). For Marx, and Mumford alike, capitalism is not a terrifying system because it is unnatural, it is horrific for the reason that it develops human and natural possibilities in terribly contradictory and uneven ways.

While the capitalist mode of production produces vast amounts of agricultural production, it simultaneously steals the land beneath the labourer, depletes the soil of its vitality, and does so at the expense of the diversity of larger ecological systems. In the production process of wool, the capitalist mode of production creates mass production and improves technological advancements in terms of machinery, but in the same process, it simplifies labour, pushes the worker into complete destitute, and ultimately overproduces objects that have no purpose in use. The mine represents in many ways, the complete separation of labour from objective being, i.e. nature (John Bellamy Foster &

Paul Burkett, 2016). The mine does not satisfy human desires directly, it does not cultivate the senses, or serve as a workshop for the forces of labour; it is the incarnation of abstraction. Mumford (1934) summarizes the effect of the mine on the body and mind of the miner when he states:

One further effect of this habitual destruction and disorganization must be noted: its psychological reaction on the miner. Perhaps inevitably he has a low standard of living. Partly, this is the natural effect of capitalist monopoly, often exerted and maintained by physical compulsion: but it exists under relatively free conditions in “prosperous” times. The explanation is not difficult: almost any sight is brighter than the pit, almost any sound is sweeter than the clang and rap of the hammer, almost any rough cabin, so long as it keeps water out, is more hospitable place for an exhausted man than the dark damp gallery of a mine. The miner, like the soldier coming out of the trenches, wants a sudden relief and an immediate departure from his routine. No less notorious than the slatternly disorder of the mining town are the drinking and gambling that go on in it: a necessary compensation for the daily toil. Released from his routine, the miner takes a chance at cards or dice or whippet racing, in the hope that it will bring the swift reward denied him in the drudging efforts of the mine itself. (p. 72)

By following these practices through history, we have been able to trace the pregnant preconditions (agriculture and wool) of the capitalist mode towards their birth in the subterranean mine in the late 18th and early 19th century. At the core of this transition is a new capitalist ecology, one founded upon abstract conceptions of reality. Without the earliest inklings of abstraction separating the peasant from the land and the instruments of production from the craftsman, the fuller development of industrial capitalism would not have become possible, however, without the subterranean an ecology of value-creation would not have been actualized.

5.7 Conclusion

We have broadly traced the development of mining from the ancient world, through the feudal order, and into the capitalist epoch. In doing so we have illuminated the ways in which the preconditions for the development of capital all converge upon the birth of the subterranean mine. The mine necessarily brings together expropriated peasants, large-scale machinery, and merchant's capital, while also connecting this to the city and countryside in order to circulate the products of the mine at will. The result of these material developments is the creation of a unique mining subjectivity, i.e. a capitalist logic. Simply, the capitalist epoch could not have been born without the mine, and the mine could not have germinated without capitalist preconditions.

In the following chapter, the historical narrative laid forth in this thesis will be summarized succinctly and an open-ended alternative will be proposed.

Chapter 6: Final Remarks

This thesis began with an examination of the long dissolution of the feudal agricultural system, beginning with the complete reclamation and colonization of the fens, moors, and bogs by the 14th century. From the 14th to the 16th century, the typical relation between lord and peasant began to shift away from rent-in-kind towards money-rent, forcing the peasant to exchange their agricultural products for money. This was fundamentally the product of the failure of re-enservment by English lords and the growing power of peasant labour. This movement towards marketized money-rents culminated in the first minor enclosure movement in the 16th century and was done in part by the yeoman and landed classes. This slow expropriation of peasants from the land was only intensified during the 17th century, which was a politically and socially tumultuous time, and resulted in power being consolidated into the hands of the landowners. By the late 18th century, we see full enclosure was happening across the English countryside, in effect, forcing the vast majority of the peasantry into vagabondage or the factory, and was done by the large landed class, i.e. the bourgeoisie. However, by tracing this development we can see how this transformation was put in motion well before the final enclosure movement.

While the dissolution of feudal agriculture was occurring, within the realm of wool production, we see the consolidation of sheep and land into a smaller and smaller number of hands by the 16th century. This development came greater accumulation of sheep and arable land in a manner never before seen in English history. In arable land as well as pasturage we see the same movement towards marketized money-rents, which represents a further separation of labour from the land. In shepherding under money-rents what we see is that money has the opportunity to mediate the relationship between not only peasant and lord but between them both and the land. The introduction of money rents into immediate wool production invert the simple use-relation with the land and transforms it into a relation founded upon exchange solely. All of these developments occurred up until the 17th century, and within the realm of textile production, which is necessarily connected to wool production, we see the rise and fall of the guild. During the period from the 10th to the 16th century, the guild came to prominence but was slowly being dissolved by the rise of textile manufactories outside the influence of the guild. Typically, the guild ensured a livelihood for those craftspeople labouring within the city; however, as peasants were expropriated from their land due in part to the enclosure movement in the name of agriculture and wool production we see manufactories able to absorb cheap labour undermining the power held by the guild. The guild brought together instruments of production as well as labour but with the fall of the guild came the potential for separation of labour from the instruments of production. In many ways, the guild created the conditions for capital to buy labour and instruments, and agriculture and wool production created a mass of disappropriated labourers whose only means of

survival was to sell themselves piecemeal as waged labourers. These historical developments would not have become possible without the transformation in agricultural relations, beginning with the first minor enclosure movement, and later with the expropriation of labourers from their land. The woolen textile manufactories, which eventually came to take on the form of the industrial cotton-spinning factory, only was possible given the severing of the bondage between the peasant and the lord, occurring both in the realm of agriculture as well as shepherding. Nevertheless, these two realms of production on their own do not produce the capitalist mode; they instead represent the preconditions for the capitalist mode.

While the first two realms of production represent the dissolution of the feudal mode, and the ‘freeing’ of labour from the fetters of bondage, it is in the development of the manufactories as well as the birth of the subterranean mine that represent the earliest moments of capital being able to take on an industrial form. By the 18th century, there were several massive ecological and social contradictions driving the development of specific technological innovations, allowing for a shift into previously unseen realms of production. With the case of the subterranean mine, these developments meant that by the 18th century, money had gained the newfound ability to purchase instruments in the form of machinery, lubricate the distribution of products across a long distance, to purchase labour, and to mediate production. The mine on its own does not produce surplus-value, as it does in the textile factory; however, it is in the mine that we see the earliest precursor of industrial capitalism. If the factory represents the adulthood of the capitalist mode of production, then in the mine we see its adolescence.

In this synopsis, we can see how each one of these realms of production catalyzes changes in other domains. These movements are by no means directly causal; nevertheless, in the same way in human physiology when we see movements in one part of the body affecting other regions of the body, the English landscape represents a similar physiological topology. Each one of these realms of production was forced to slightly metamorphosize, and eventually radically transform, to deal with a shifting social and ecological body.

The major transformations discussed in this thesis, both social and natural, are not subsidiary aspects of the capitalist mode of production. They are fundamental to its inner workings. The separation of labour from the land not only buttressed the adoption of relations of private property but also afforded juridically ‘free and equal’ labourers to sell their labour-power to the capitalist for a wage.⁴⁹ The separation of labour from the instruments of production allowed for the capitalist to accumulate the means of production as well as placed the labourer as the overseer of production as opposed to the active agent of production (Marx, 1977). The bondage seen, both in the feudal order and the ancient world, that linked the labourer with the soil as much as the river with the land, had to be torn asunder to create the expropriated peasant ready to be absorbed for factory production (Marx, 1973). With all of this came the inability of the labourer to reproduce themselves. As the commons were stolen and their livelihoods taken, their only option

⁴⁹ “The secret of the expression of value, namely the equality and equivalence of all kinds of labour because and in so far as they are human labour in general, could not be deciphered until the concept of human equality had already acquired the permanence of a fixed popular opinion. This however becomes possible only in a society where the commodity-form is the universal form of the product of labour, hence the dominant social relation is the relation between men as possessors of commodities” (Marx 1977, p. 152).

left was that of wage-labour (Marx, 1977). Out of these conditions came the development of industrial capital, which united money, labour, instruments, and a capitalist logic, into an entity: capital. In England, the capitalist mode of production may have been the first to emerge, but it certainly was not the last instance of this historical rupture.

The birth of the capitalist mode takes on various forms, and the fundamental characteristics of its development are seen throughout its unfolding across the globe. While we traced this historical development in England, the process of ‘Primitive Accumulation’, which occurred throughout the colonies of Africa and the Americas during the time of Marx, now occurs behind various guises. In this contemporary age, ‘Primitive Accumulation’ is done as much by the corporation seeking to ‘ethically develop’ a region as through military force ‘democratizing’ a ‘corrupt’ nation. Whatever the disguise, it all comes from a similar motive: the desire for expansion into new domains of potential value extraction. The point here is that the degradation of human society and nature goes hand in hand with the development of the capitalist mode of production. They are as inseparable from one another as the inseparability of slavery and the ancient world or political force and the feudal order. For this reason, an alternative must necessarily be pursued.

Eco-Communism, which for someone as myself who has always connected the liberation of humanity with the liberation of nature, seems like a redundancy in terms; the historic atrocities done in the name of communism, however, force us to alter the term to invoke an image of drastic difference. This concept, Eco-Communism, is increasingly difficult to grasp in a world of late-stage capitalism. The capitalist mode not only

crystallizes history into a sacrilegious relic of an immature time, but it also concretizes the malleability of the present to intensify movement while limiting any real form of qualitative transformation.⁵⁰ Eco-Communism, contrary to the capitalist mode, is something which remains unrealized. It is the negative potentiality currently slumbering within human society and nature alike.⁵¹ Capitalism carries with it the material possibilities for the liberation of both nature and humanity; however, it cannot overcome itself because of its biggest impediment: capital itself.⁵² Production under the capitalist mode, i.e. commodity production, is not done to satisfy human desires or to unlock new socio-natural possibilities, it is always for the sake of transforming (M) to (M'). A hoard of commodities is produced by the capitalist, and whether this hoard is of historic art or ballistic missiles matters not in the slightest to the capitalist. Eco-Communism, contrary to the capitalist mode, does not begin with abstract freedom, it begins with the liberation of labour, i.e. the liberation of the senses engaging with the world. As Marx (1967) states:

⁵⁰ "Continuity is preserved through rupture: quantitative development becomes qualitative change if it attains the very structure of an established system; the established rationality becomes irrational when, in the course of the internal development, the potentialities of the system have outgrown its institutions. Such internal refutation pertains to the historical character of reality, and the same character of reality, and the same character confers upon the concepts which comprehend this reality their critical intent. They recognize and anticipate the irrational in the established reality—they project the historical negation" (Marcuse 1964, p. 221).

⁵¹ "However, "man," "nature," "justice," "beauty" or "freedom" may be defined, they synthesize experiential contents into ideas which transcend their particular realizations as something that is to be surpassed, overcome. Thus, the concept of beauty comprehends all the beauty not yet realized; the concept of freedom all the liberty not yet attained" (Marcuse 1964, p. 214).

⁵² "The real barrier of capitalist production is capital itself. It is that capital and its self-expansion appear as the starting and the closing point, the motive and the purpose of production; that production is only production for capital and not vice versa, the means of production are not mere means for a constant expansion of the living process of the society the producers" (Marx 1967, p. 250).

Freedom in this field can only consist in socialised man, the associated producers, rationally regulating their interchange with Nature, bringing it under their common control, instead of being ruled by it as by the blind forces of Nature; and achieving this with the least expenditure of energy and under conditions most favourable to, and worthy of, their human nature. Beyond it begins the development of human energy which is an end in itself, the true realm of freedom, which, however, can blossom forth only with this realm of necessity as its basis. (p.820)

Freedom is not a juridical law imparted upon humans from above, it is an engagement as unified members of a community deciding through labour what social organization is to look like. Labour, under this new form, would not be purely social or purely private, but rather would connect, and in effect, unite the life-forces of people together. But part of this connection means a greater connection with the world external to the individual and human society, hence, the need to bond together the metabolism between humans and nature (Foster & Burkett, 2017). With this transformation comes a greater intimacy with nature. Practices like deforestation or strip-mining do not destroy nature, but they do destroy the complex forms that nature takes. It is only by recognizing that there is a qualitative balance, a coherence, a unity, within ecological systems that must be maintained in the process of appropriation (Schmidt, 1971).

What is being proposed here is not some kind of regulated state apparatus distributing goods to people, but rather a socio-natural relation in which humans more thoughtfully interact with their world. Eco-Communism, as an organic model of the world, does not posit nature as something untouched or idealistic, but rather as an interwoven structure with human systems (Daly, 1978). Meaning that the act of appropriation from nature is something that must be accounted for. Not in the accounting book of the central authority, but as a qualitative aspect of a complex and ever-changing

broader structure. By no means has an exhaustive illustration of Eco-Communism been provided here. Nor has theoretical or empirical justification been cataloged. What has been provided here should be thought of as an open-ended question. What are we to do given the current state of the world?

The answer is certainly not simple. There cannot be an individual answer for a social question as broad as this one, but if there is any certainty in speculating on the future of our world, it is that it will change. All that is solid will melt into air. Both nature and human society will transform, but it must soon be decided whether we decide to uncover the true face beneath the mask of this whole charade. Whether we reveal what is truly occurring during this economic masquerade; that the great drama we are a part of is simply the relation of humans to one another and nature. It is from that starting position that any critical revolutionary action begins.

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