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# Abolishing Fossil Capitalism

A Philosophical Examination of the Systemic  
Nature of the Climate Crisis

Master's thesis in Philosophy  
Supervisor: Ronny Selbæk Myhre  
December 2023



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Lastly, I would like to take this opportunity to rectify an absence. A previous draft of this thesis dedicated some time to an issue that, upon editing, I could no longer include in this paper. Therefore, I would like to ensure that I can state, as clearly as possible, and for no other reason than my freedom to do so:

From the river to the sea, Palestine will be free!

## **Abstract:**

This thesis is an exploration of the climate and ecological crises as systemic issues that necessitates a revolution. The first chapter introduces the severity of the crisis at hand, and presents it as an existential crisis facing humanity in general, and the Global South in particular. Then the second, third and fourth chapters explore the intricacies of the systemic nature of this existential crisis. Capitalism is outlined as a historically specific economic system that is predicated primarily on a particular form of property relations: private property. The capitalist system, and its internal imperatives, are first explicated before they are examined through a reconstruction of *The Robbery of Nature*. In this book, Foster and Clark argue that capitalism is an inherently unsustainable system whose imperative of infinite extraction and growth on a finite planet is bound to wreak destruction on the planet. The four different economic systems discussed by Foster and Clark, modern capitalism, green capitalism, promethean “socialism” and eco-socialism, are then evaluated against the theoretical framework of Kristin Raworth’s *Doughnut Economics* to determine their ecological merit. The evaluation of green capitalism in particular is, in the third chapter, done through a reconstruction of Paul Hawken’s proposed version of green capitalism in his 1999 book *Natural Capitalism*. The next chapter explores eco-socialism and evaluates it as the only one of the four economic systems that is compatible with the demands for sustainability put forth by Raworth. With this in mind, the climate struggle becomes the struggle towards eco-socialism; the complete abolition of fossil capitalism. The methods this eco-socialist revolution can employ, and still maintain moral legitimacy, are discussed in the final chapter. Three different moral approaches are presented; pacifism, non-pacifism and anti-pacifism. First, the moral pacifism that has characterised the climate movement thus far is outlined. Then a reconstruction of Andreas Malm’s argument for strategic non-pacifism, with an emphasis on property destruction, is introduced as an alternative. His criticism of moral pacifism does not make explicit a definitive moral limitation to acts of resistance, and so a final approach is explored. Frantz Fanon’s *The Wretched of the Earth* represents the anti-pacifist approach to resistance, and thus lends a less restrictive perspective to the moral limitations of the eco-socialist revolution. The sum of these deliberations present a conceivable outline for the climate movement that serves as an alternative to predominant thoughts on the subject.

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## Introduction:

The climate and ecological crises are existential problems, yet decades of increasingly extensive knowledge of the threats have not yielded many results. The environmental crisis remains, in spite of it all, the greatest challenge facing humanity. Dale Jamieson has offered an extensive explanation of the reason for the failure to sufficiently confront the issue of climate change and ecological breakdown in his book *Reason in a Dark Time: Why the Struggle Against Climate Change Failed – And What it Means for Our Future* (2013). His work outlines several of the historical events pertaining to environmental politics, from the first Conference of the Parties (COP 1) onward, and how they failed to deliver on promises (Jamieson, 2014: 39). He points to a series of policy issues, but does not address the root cause of the problem; the political and economic system in which it all has occurred.

The British economist Nicholas Stern has argued that action on climate is even financially beneficial as “every dollar spent on reducing emissions returns 12 dollars in benefits” (Jamieson, 2014: 114). When the fate of humanity is at stake, and economic interests also align with climate action, then why do those actions elude us? The economic benefits postulated by Stern are predicated on society as a singular entity with a shared economic interest, but the lack of enactment on this measure, that of reducing emissions, seems to indicate that not everyone shares in this interest. The economic interests of the ruling class under capitalism are not symmetrical to the economic interests of society as a whole. To understand the failure on climate change thus far one cannot ignore the inner workings of capitalism as a framework for economic, and by extension, political decision-making.

John Bellamy Foster and Brett Clark offer an analysis of the climate crisis that is not separate from capitalism, but rather a direct result of it, in their book *The Robbery of Nature: Capitalism and the Ecological Rift* (2020). Capitalism is presented as a system that necessitates excessive extraction from nature, amounting to a “robbery system” (Foster & Clark, 2020: 8). Foster and Clark, thus, take Marx and Engels’ original thesis of the extraction of surplus value from the wages of the worker and illustrates how this also applies in relation to nature, a concept less frequently noted about Marxism (Foster & Clark, 2020: 45-46). It amounts to a rift in the social metabolism between human society and nature (Marx, 1981: 949). This takes the shape of more being taken from nature than is given back, and it is becoming increasingly clear that the metabolic rift this has led to is a tremendous problem for not only nature, but humanity as well (Foster & Clark, 2020: 8). The climate crisis, as the most dramatic particular manifestation of the metabolic rift, is a problem that cannot be solved until it is first understood. The scientific understanding of the crisis is already well-documented, but the systemic nature of the crisis, as a crisis of capitalism in particular, has remained the topic of pieces of literature that have yet to shape the public consciousness on the issue. It is to this literary and academic canon that this thesis will be added.

I will reconstruct the understanding of the crisis laid forth by Foster and Clark, and then from their writing highlight the four economic systems they discuss: modern capitalism, promethean “socialism”, green capitalism and eco-socialism (Foster & Clark, 2020: 272-279). Green capitalism and eco-socialism, as evident by their nomenclature, hold a certain promise of creating a sustainable society. I will explore these two systems, in particular, against a set of requirements for sustainability predicated on Kate Raworth’s book *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist* (2017). The requirements she presents are based on a set of nine ecological boundaries that a sustainable society ought not to exceed (Raworth, 2017: 41-45). The particular theory of green capitalism to be examined in light of Raworth’s work is Paul Hawken’s *Natural Capitalism: The Next Industrial Revolution* (1999). It presents a conceived form of capitalism intending to extract far fewer resources than conventional capitalism, and that also attempts to impose a protection of nature not found intrinsically in capitalism (Hawken, 1999: 10-11). Eco-socialism, on the other hand, will be formulated on the continued basis of the reconstruction of Foster and Clark, as well as on a particular understanding of its relation to the current economic system.

Eco-socialism will be understood as the abolition of the fossil capitalism that characterises the economic system as is. *Fossil capitalism* is a denotation of the intrinsic link between the fossil industry’s position in the current economic system and that economic system itself. The fossil industry is maintained by the principles of capitalism, for by socialist principles it would have been dismantled long ago for the harm it is doing to the planet and its inhabitants. As such, this paper will explore the notion of an eco-socialist revolution, that is to say an abolition of fossil capitalism, and, moreover, the particular nature of the overthrowing of this system. The climate movement, examined as a would-be eco-socialist movement, would resist fossil capitalism, but this resistance can come in many different variations. The final chapter of this work will explore such a movement through the lens of pacifism, non-pacifism and anti-pacifism. The latter two, predicated on Andreas Malm’s *How to Blow Up a Pipeline: Learning to Fight in a World on Fire* (2021) and Frantz Fanon’s *The Wretched of The Earth* (1963) respectively, will offer alternative perspectives to the dominating pacifism of the climate movement thus far. An alternative that might prove to be needed in the carrying out of the abolition of fossil capitalism.

## **Chapter 1: On the Severity of the Climate and Ecological Crisis:**

Human beings have the capacity to transform the environment around us, and throughout our existence we have utilised this in a series of ways so as to improve our chances of survival. From establishing agriculture and domesticating animals to the developments of medicines and the industrialisation of society; we have, to an increasing extent, altered our surroundings to avoid having to alter our lifestyle to them. The assumption that we can avoid any unwanted alteration in our ways of life if we only dominate our surroundings enough is arguably the greatest fallacy that modern human civilization is predicated on. The laws of nature cannot be transformed to serve our every whim, and the attempts to subdue nature in the exploits of growth and prosperity has led to one of the gravest problems to ever face our species: the climate and ecological crisis.

In this chapter I will introduce the environmental crisis and its severity. The main focus will be the issue of global warming, meaning the result of the ever-growing emissions of greenhouse gases into the atmosphere. However, other related issues such as habitat-destruction, ocean acidification and a series of other harmful, anthropogenic changes to the natural environment also account for the crisis. There is often an emphasis on the perspective of natural science when dealing with the issue of climate change, and that is an understandable approach as it is a matter of a series of intricate physical, chemical and biological processes interacting with one another in a manner that destabilises the climate. However, it is an insufficient approach when it is the only one, for it is vital to explore what this destabilisation means for humans, not primarily on a physiological level, but on a societal level. The SSPS-8.5 scenario, also known as the high emission scenario, opens up for the decimating possibility of 4 degrees of warming by the end of the century (IPCC, 2022). The severity of the climate crisis is easily underestimated when the only focus is on whether it is physiologically possible to survive in a 2, 3 or 4 degree world, when the question should rather be if human civilization can maintain itself in a warming world. By focusing on the sociological, rather than biological, effects of the climate crisis I hope to illustrate precisely how dire this crisis truly is; and why the drastic forms of resistance that will be discussed later in the thesis can be held as proportionate.

In April of 2023 the global mean concentration of carbon dioxide in the earth's atmosphere was nearly 425 ppm (parts per million) as measured at the Mauna Loa Observatory in Hawaii (McGee, 2023). To put this in perspective, prior to human's large-scale extraction of fossil fuels the amount of carbon dioxide in the Earth's atmosphere had not exceeded 400 ppm since the Pliocene 3-5 million years ago (NASA, 2013). This geological era, vastly preceding the existence of humans, had a climate that was almost unrecognisable, and bore few similarities with the climate we know today. The global temperatures were 3 to 4 degrees higher than it is today, and the sea levels were as much as 5 to 40 meters above what they are now (NASA, 2013). The lag in the climatological system means that not all the effects of a 400+ ppm world have necessarily come into effect yet. While that is frightening

enough on its own accord, the main problem remains the pace at which the concentration of carbon dioxide is increasing. Moreover, the, as-of-yet, inadequate efforts at reducing these emissions.

The problem of climate change is not a one-dimensional one, and the solution cannot be summed up in a singular emission reduction goal. In many ways, it is a problem that is not solved, but rather limited and, if possible, reversed. A stable climate, that is to say the climate whose predictability and consistency allowed for humans to survive and for civilisations to develop, has an upper limit of around 350 ppm (Foster & Clark, 2020: 241). Earth's climate system is fragile and seemingly small changes to the atmosphere can drastically transform the planet and the form of life it is either suitable or unsuitable for. An example of this is how 21 000 years ago, during the last glacial maximum, that is to say the point at which the most recent ice age was at its most extensive, the concentration of carbon dioxide in the atmosphere was at 180 ppm (Morée, 2021). That is 40 ppm closer to the 1750 baseline levels than we are now, as the 1750 baseline is at 280 ppm (Morée, 2021). In other words, the changes we are exerting on the climate now are comparable to the ones that transformed a glacial maximum to the climate that allowed for modern human civilisation. Therefore, it is highly relevant to investigate the solidity of said civilisation, because it is not a given that human societies as we know them will persist through this crisis for that much longer.

Human societies and civilisations have collapsed countless times in the past. When they did, for the most part, they were simply replaced by new ones. The Western Roman Empire collapsed 1500 years ago, but the area that used to be under its dominion is neither lawless nor desolate today (Mark, 2019). This might make *societal collapse* seem like an overly frightening term to describe a common historical occurrence. An event that might not be pleasant, but that nonetheless is far from an end-of-the-world scenario. In fact, the social scientist Luke Kemp concluded that the average duration of a civilisation is 340 years (Kemp, 2019). However, the study is based on a limited number of civilizations, and a specific definition of a civilization that may be scrutinized. For instance, it includes a requirement that a civilization must have “a continuous political structure”; the distinction between a transition from one political structure to another, and a continuation with changes over time, might often come down to subjective judgement (Kemp, 2019). Nonetheless, it does paint a picture of civilizational collapse as something that certainly is not unheard of throughout history. With that in mind, why should the notion of an impending societal collapse induced by the climate crisis be viewed as anything other than history going its course?

Firstly, a societal collapse, even if common, is still a drastic occurrence that comes with a heavy toll. Secondly, and most importantly, a societal collapse caused by the climate crisis would likely be categorically different from the more isolated instances of collapse, such as that of the Western Roman Empire, seen throughout history. For the climate crisis can render a place unliveable. Several major cities are on track to end up completely submerged before the end of the century, such as Lagos,

Dhaka and Bangkok (Phelan, 2022). Other regions will be unliveable due to the heat, such as several vast regions in Africa and Asia (AfricaNews, 2022). Therefore, new societies cannot always form in lieu of the ones that collapsed. Some efforts by societies to survive such conditions is relocation. For instance, Indonesia has made plans to change its capital from Jakarta to Nusantara as the former is vulnerable to sea level rise and cannot function as an administrative centre for long (Singh, 2022). By relocating the administrative centre of Indonesia away from the most vulnerable regions in the country the state is hoping to keep the society functioning.

The problem is, however, that the climate crisis is not geographically contained in any way. While it does affect certain regions more so than others, over time every part of the world will be catastrophically affected. It is the *global* aspect of *global warming* that makes this crisis categorically different from anything human history has seen so far. Several civilisations have collapsed partially or entirely due to localised climate changes, mostly droughts, such as the Mayan, Anasazi and Tiwanaku civilisations (Kemp, 2019). However, what happens when droughts and floods occur everywhere? Some regions will struggle mostly with floods and others with droughts, while every society is bound to feel the economic ramifications. Capitalism has created an interwoven economic system spanning across the globe. The products used in one part of the world is often dependent on resources from a second party, labour forces from a third party and transportation from a fourth one; a collapse in one link in this supply chain will have ramifications elsewhere. This means that a crisis in one place can, to some extent, be regarded as a crisis everywhere. Furthermore, migration crises, local conflicts over resources, weakened economies are all examples of things that can have ramifications far beyond the places they originated in. The far-reaching effects of the war in Ukraine is an example of this, and the impacts of global warming are poised to be immeasurably greater (Mbah & Wasum, 2022: 148-150).

Human societies have not experienced a world as warm as this one, and for each decimal of a degree the planet heats up we are collectively treading new ground. There is no certainty that the ramifications of this are manageable. For we are actively creating a climate that is further and further from the climate that allowed for humanity to survive up to this point. Dale Jamieson wrote in his work *Reason in a Dark Time*, in which he analyses why the struggle against the climate crisis failed, that “angering the dragon of climate is not likely to be a good business plan for maintaining human life on earth” (2014: 191). That is the tail-risk, that is to say the worst case scenario, of this reckless experiment. Moving further and further from a climate we know for a fact can sustain human societies and human life, and into an unknown climate, inherently includes the risk of extinction. However, the apocalyptic futures we might be headed towards only tell half the story.

Extensive harm has already been done as a result of the environmental crisis, particularly in the Global South. Over the past 50 years 2 million people have died due to extreme weather events, and 90% of these deaths occurred in so-called “developing countries” (Aljazeera, 2023). That is 40 000 people per

year. Meanwhile, WHO projections estimate that climate change will lead to an additional quarter of a million deaths per year from 2030 to 2050 in the form of “malnutrition, malaria, diarrhoea and heat stress” (WHO, 2021). These are also ills that disproportionately affect people in the Global South. The same goes for the ranging estimate of 3.6 to 8.7 million annual deaths due to the pollution from burning fossil fuels (Roser, 2021). This is certainly unjust on its own, but even more so when considering the lopsided contributions to emissions. The average person in sub-Saharan Africa emits 1/12 the amount of the average European, and 1/24 that of the average American (Jamieson, 2014: 146). The climate and ecological crises harm the already marginalised disproportionately. However, it is not only the crisis itself, but also the manner of bringing it about, through land appropriation to facilitate expansion of industries, that disproportionately affect the marginalised.

One of many such examples is the activities by the palm oil company Brasil BioFuels S.A., or BBF. They have been in conflict with the Temb  people and the Quilombolas in the Amazon over the land inhabited by these groups of people, but used for palm oil extraction by BBF (Mendes, 2023). The Brazilian company has been accused of several acts of violent repression against the local inhabitants of the area, and so their industry represents more than CO2 emissions and deforestation of the Amazon to the people facing this repression (Mendes, 2023). These acts are emblematic of a particular system doing whatever it can to preserve the status quo. The climate crisis, when understood as a mere unfortunate side effect of certain activities, does not take into account the extensive efforts made to preserve the status quo as is. Thus, to explore why the climate crisis, in the face of increasing awareness and suffering, remains seemingly actively pursued by corporations and governments, one must look to the economic system present in society today. This is why the next chapter will explore the system that is capitalism.

## Chapter 2: A Crisis of Capitalism:

This chapter will explore the intricate connection between capitalism and the climate and ecological crises. This will be done through an examination of capitalism as a unique economic system that inspired and maintains the specific conditions leading to the environmental crisis we see today. In other words, the climate and ecological crises will be analysed within the historical, political and economic context of the society they have occurred within. Thus, this chapter will explore the crises not as the inevitable result of human intervention in nature in general, but rather as the inevitable outcome of the precise character that this intervention has under capitalism. The chapter will begin with an explication of the capitalist system as understood in this thesis. As a theoretical framework for presenting a clear overview of the capitalist system as such I will rely primarily on Marx in his various criticisms of the system, the historical specificity of the system that Ellen Meiskins Wood contributes with, and the contemporary analysis of Foster and Clark wherein capitalism is critiqued in the context of the environmental crisis. After this deliberation I will reconstruct the position that Foster and Clark present in *Capitalism and the Ecological Rift: The Robbery of Nature*, wherein they argue that capitalism is an innately unsustainable system and that the environmental crisis of today is a direct result of the strict adherence to the internal laws of the capitalist system. This will be done to lay the theoretical groundwork for the third chapter, which will be an examination of Paul Hawken's argument for the possibility of a sustainable form of capitalism, as presented in his book *Natural Capitalism: The Next Industrial Revolution*.

### 2.1. What is Capitalism?

As mentioned previously, before the connection between climate breakdown and the capitalist system can be explored, it is necessary to define *capitalism* and explicate what is meant by the term in the context of this thesis. For it is the very way in which the term is understood that inextricably ties it to the degradation of nature. As will be seen in the next chapter, the concept of a sustainable form of capitalism relies on a specific understanding of capitalism that is less strict. That is to say, it has fewer elements required for it to be viewed as capitalism. It is a common misconception to merely equate capitalism to any and all market-based economies, but this overlooks a plethora of complexities unique to the capitalist system. These complexities are what Marx, Wood, Foster, Clark and others have in various ways delved into.

Capitalism, if explained in its most rudimentary form stripped from most specific complexities, is a “commodity system” (Foster & Clark, 2020: 282). A system that turns resources into commodities, that is to say products to be sold. These products are sold in a market, leading the colloquial adage of *capitalism* to usually be seen as the equivalent of a market economy and nothing more. However, market-based economies and the practice of trade have existed for thousands of years, but capitalism, in light of Wood's historical analysis, did not have its emergence before the 16<sup>th</sup> or 17<sup>th</sup> century (Wood, 2017: 3). Thus, capitalism is more than just trade and the existence of a market. Capitalism is perhaps

not best described by its commerce and trade, as these are general economic traits that have been present in several non-capitalist economies. Instead, to capture the unique essence of capitalism as such it could be more fruitful to view it as a system of a particular kind of ownership, production and commodification, rather than merely a form of distribution of goods through a market.

Under capitalism all production is done with the purpose of “profitable exchange” in mind (Wood, 2017, 2). Which means that products are made to be sold for a greater price than the sum of the cost of making the products. However, this profit motive guiding production tells only half the story, because the key aspect is who the profit is generated for. It is generated for the ruling class: the bourgeoisie. That is to say the capitalists, the owners of the means of production in society. Of course, as in any market-based economy an individual could decide to produce something of their own and sell it for their own profit. For instance, I might head out into a meadow and pick flowers before fashioning them into a wreath. Then I could sell this flower wreath for 5 dollars and enjoy the money I made. While permissible under capitalism, this does not constitute a capitalist process of production, and that is because in this case the production of the commodity, that is to say the picking of the flowers and the weaving of the wreath, were carried out by the same person who reaped the profits. In other words, there was no division between the labourer carrying out the process of production and the owner of the means of said production. This might be permissible under capitalism, but it is not the *modus operandi*. Instead, capitalism operates with a clear distinction between worker and the owner of the means of production. This division of labour is “the starting-point” from which an entire class divide springs (Marx, 1887: 245). This class divide, stemming from the distinction between owners and non-owners, is intrinsic to an understanding of capitalism, because it illustrates the existence of two entirely separate economic actors in society, each of them operating differently. While the bourgeoisie is motivated by profit, and make economic decisions predicated on the pursuit of increased profit margins, the proletariat is motivated by wages.

### **2.1.1. The Wage System:**

Further analysing the concept of wages, while immediately familiar to anyone living in a capitalist society, is crucial to gain a full understanding of this system. For it is through the wage system that the divide between worker and owner, and with it the class divide in general, is maintained. More specifically, it is through the *dependency* on wages. Wages are used, by the capitalist, to create a “social dependence of the labourer upon [them]”, and in this way they appear necessary for the economy (Marx, 1887: 543). The class divide is reliant on the workers producing commodities *for* the owners of the means of production, and if all workers could sustain themselves by opting out of this relation, then it stands to reason that many, if not most, would. After all, producing something in its entirety, either alone or in unison with other workers, only for someone who contributed no labour of their own to take a significant portion of the profit does not appear as a particularly desirable position. This is what is meant by the concept of wage theft, the value extracted from the workers in



the form of unpaid wages; it is “the appropriation of unpaid labour” that is the “secret of surplus-value” (Marx, 1887: 438). For capitalism is predicated upon the extraction of surplus value, but a surplus can only be created if a product is sold for more than it cost to produce it. Therefore, wages are withheld in order to manufacture the profit for the owner. This wage theft is not mitigated by an increase in wages, no matter how much by. It is only the complete elimination of the profit assumed by the non-labourer, that is to say the capitalist, that would eliminate the wage theft. Simply put, under capitalism it is what someone is willing to pay for a commodity that determines its worth, whereas Marx’s labour theory of value postulates that it is the cost of production in the form of labour that determines the worth (Marx, 1887: 144). Thus, through a Marxian lens, the notion of an extracted surplus is an extracted surplus *from* someone, in this case the workers. Later in the text I will explore how this extraction from something can apply not only to workers, but as Foster and Clark focus on, also on nature itself.

In spite of this system being far from ideal for the worker, it is the norm under capitalism to engage in this form of wage labour. This is due to the aforementioned dependency that has been created. For without ownership of any means of production, a person cannot produce that which is needed to sustain themselves. Be it land, machines, a large enough labour force or any other requirement for sufficient production, it is unavailable to the majority of people under capitalism. Marx referred to this as slavery, because the worker only has the choice between selling their labour to those that do own the means to produce, or starve to death (Marx, 1959: 9-10).. The fundamental problem with the wage system, for Marx, is thus not the level of the wages, or them being too low, but the dependency on wages to begin with. It turns humans into commodities, in need of selling their labour to sustain themselves, and this is to “admit slavery” (Marx, 1959: 10). For this, to Marx, represents a form of domination by the bourgeoisie over the proletariat similar to that of chattel slavery. The people subjugated by chattel slavery had a similar illusory choice, namely between giving away their labour to the plantation owner, or being tortured and then killed. The threat for the wage labourer under capitalism is starvation, homelessness and other material ills, all leaving them with no choice but to sell their labour for that which the capitalist offers.

While it is difficult to pinpoint a particular moment in time where the wage system began, it is undoubtedly not something that has always been there as the most common form of compensation for labour. The pre-civilisational form of compensation for labour was, naturally, the *particular produce* of the labour. Be it the berries that were picked, the stones that were gathered, the animals that were hunted or the trees that were chopped. The dawn of civilisation did not immediately lend itself to the wage system either. Mesopotamia is the society commonly regarded as the site where the neolithic revolution first occurred, that is to say where agriculture was first introduced (Dyson, 1964: 672-675). However, the first signs of a Mesopotamian monetary system, even in its more rudimentary form, date from roughly 5000 years later (Friedlob & Plewa, 1996: 1). Nor did the beginning of commerce or the

invention of money directly result in a widespread wage system of the magnitude seen in modern capitalist society either, for its precise character is unique to the capitalist system. For instance, trading a pelt of fur for food, or even money, would not amount to a wage system in the same way.

There are two vital distinctions between the traditional form of pre-capitalist, and even pre-feudal, commerce, and the wage system under capitalism. The first distinction is that capitalist trade of labour in exchange for wages is vertical, whereas two workers engaged in different fields electing to trade their produce with one another would be a horizontal form of labour exchange. In other words, the capitalist wage system is differentiated from mere exchange of labour produce in that the produce is exchanged between a worker and an owner, rather than between two workers. Thus, it is not a matter of labour exchanged for labour, for the capitalist does not have any labour of their own to exchange; instead they exchange the “accumulated labour” of others (Marx, 1887: 148). The second distinction that is crucial to illustrate is that of the aforementioned dependency on wages. Certainly, a dependency on cooperation with others has always been a staple of civilisation, in many ways a society is bound to be predicated on the idea that people would thrive better together than alone. However, the dependency upon wages under capitalism is not born from the practicality of exchanging labour for money so as to have access to products outside of what you made yourself, but rather from the exclusion of the means to produce enough on your own to survive. For it is not merely the case that a single individual belonging to the proletariat cannot sustain themselves without wages, it would also be the case for multiple people working together. Horizontal organisation of labour, that is labourers working together and sharing the produce among themselves in order to meet their material needs, has been made far less accessible by capitalism. That is due to large scale privatisation. What might have been land free to use by everyone living on it in the past, is now owned by capitalists (Marx, 1887: 236). Thus, it cannot be used freely. This leads to a situation wherein capitalism, through its turning of resources into private property, have made workers dependent on their only remaining option within the system: wages.

### **2.1.2. Private Property and Capital:**

This concept, that of private property, is so inherent to capitalism that Marx and Engels summed up the goal of communism, the antithesis to capitalism, as “the abolition of private property” (Marx & Engels, 2005: 21). This is not because private property is all that capitalism is, but rather because it is vital to the existence of the system. Take away the private property, and the capitalist system collapses, and therefore this is the primary goal of any socialist revolution. The third chapter will explore this further, as Paul Hawken’s efforts to make substantial changes within the capitalist system without removing private property is investigated. Firstly, however, private property must be understood. Colloquially it is, of course, used to describe something that is owned by an individual or non-state actor, but this is not its meaning in relation to capitalism. That traditional form of ownership, the one I might have of my sweater and you have of yours, is a matter of *personal property* (Marx & Engels,

2005: 22). Critiques of capitalism are far more interested in private property than personal property, because it more succinctly captures the uniqueness of capitalism as a system of a particular kind of ownership.

Private property relates to ownership not only of a certain object or piece of land, but also by extension that which someone else, that is to say workers, produce with that piece of land or object. It is “the result... of alienated labour” (Marx, 1959: 33). In other words, the produce from a factory belongs to the factory owner, as they have the factory as their private property. Private property is, thus, a form of ownership that subsumes the labour as if it was merely a part of the thing itself, and belonging to the owner of it. While workers are paid a portion of the value in the form of wages, they are done so for practical rather than ethical reasons. Which is to say that a worker is not compensated for their labour because they are owed it, for private property provides the owner of the means of production with *complete* ownership of the produce. Thus, the workers are paid as little as practically possible while still being able to acquire their labour. Marx declared that “wages and private property are identical”, for they both spring from the same source of value: labour (Marx, 1959: 34). Private property is, then, the accumulation of labour in the hands of an individual, and wages are the parts of labour returned to the worker to keep them employed. This is what the Marxist critique of capitalism is often centred around, that produce is seen as a matter of private property and thus belonging to the owner of the means of production rather than the workers. Marx and Engels note that private property is “already done away with” for 90% of the population, and it can only exist for the few whom it exists for precisely because of its “non-existence” for the remaining “nine-tenths” (Marx & Engels, 2005: 23). Private property, then, cannot exist for everyone. The very character of the phenomenon is such that it preys on the labour of the many to transform it into profit for the few. This profit takes the form of capital accumulation.

Capital is an extension of private property, and it is what Marx calls the accumulation of “dead labour” (Marx, 1887: 285). It is something which “vampire-like, only lives by sucking living labour, and lives the more, the more labour it sucks”; it is, simply put, the money derived, in one way or another, from labour (Marx, 1887: 163). Be it one’s own labour sold for wages, or the produce of someone else’s labour sold in the market. Naturally, the capitalists will accumulate far more money than the wage-workers as they can derive a portion of the value produced by the labour of multiple workers, instead of just one’s own labour. The result of this is a wide wealth gap in society. However, the class divide under capitalism, while consistently in tune with wealth discrepancies, derives from one’s place in the production process, not one’s wealth. For it is the distinction between relying on one’s own labour and being able to rely on someone else’s labour, through the ownership of means of production, that separates the classes.

Wealth is merely consequence, not an initial cause, of this divide. Thus, the owner of a factory and a highly paid footballer might have identical wealth, but not necessarily both be viewed as capitalists. For only the ownership of private property makes one a capitalist, and a football player with extraordinarily high *wages* will not by virtue of this be a capitalist. However, in the case of the footballer it is unlikely that they can accumulate too much wealth without ownership of any means of production, as their income, even if traditionally referred to as wages, is predicated on the profiteering on the labour of others. Such as through the sale of merchandise made by other people. The same goes for the matches themselves and ticket sales, something that could scarcely have been produced by virtue of the footballer's labour alone. The point at hand is that ownership of the means of production and private property is not as simple as the ownership of factories and machinery, but rather best described as something that can generate capital through the ownership of the produce of someone else's labour. Making the accumulation of great wealth without ownership of any means of production a mere hypothetical. Furthermore, any person with enough wealth, that is to say enough accumulation of capital, will be in possession of sufficient dead labour to purchase living labour, which in turn is done purely for the sake of accumulating even more dead labour, which is to say money. Thus, capital and private property, while being distinct, and intrinsically linked through the ability of each to lead to further acquisition of the other.

### **2.1.3. Exchange Value and Use Value:**

The accumulation of wealth can also be viewed as the accumulation of value. However, by saying this, *value* as such has been limited to be a particular kind of value, one that can be represented accurately in the form of money. Thus, it is not a matter of value existing uniquely in the product itself, but rather something that is equivalent to a certain sum of money. Capitalism has an understanding of value as *exchange* value, and it takes precedence over *use* value (Marx, 1978: 134). Explicating these terms further is vital to understand the ways in which value is generated under capitalism, and how it constitutes an act of extraction. Use value is the value something has by virtue of its utility, so how beneficially a particular object can be used determines its use value, and it lies in the object itself (Marx, 1887: 41). It is the non-monetary value of things, and it represents the way in which we immediately approach objects without a particular economic lens. For instance, the use value of a coat would be determined by its ability to be worn, and so, as Marx puts it, "with two coats two men can be clothed, with one coat only one man" (Marx, 1887: 33). Two coats, then, have a greater use value than one coat. Exchange value, on the other hand, would deem a coat costing 200 dollars to be more valuable than two coats, each costing 50 dollars, in spite of their ability to clothe twice as many people. Exchange is the "total abstraction from use value", because it makes everything valuable by virtue of what it can be exchanged for, rather than what it can do (Marx, 1887: 28). A coat is not valued for being worn and a hammer is not valued for its ability to insert nails into wood. Instead, a hammer and a coat, if they cost the same, are, from the perspective of valuation, no different from each other, for they can be exchanged for the same.

The use referred to in use value is typically a matter of an anthropogenic utility, meaning the focus is on the ways in which something is useful to human society, or particular individuals within. However, this does not mean that an economic system predicated on use value would turn natural resources into commodities at high rates in order to maximise utility. Because with an increasing knowledge of nature, and humanity's role in a larger ecosystem, it makes sense to view utility more holistically. In other words, a tree is not merely useful as fire wood or when fashioned into furniture, it can also be useful as a vital cog in the ecosystem that, as a whole, benefits humans. Thus, a system based on use value could turn natural resources into commodities, but it has no imperative that forces it to. This is where exchange value differs greatly from it. For the view of value as the equivalent of that which something can be exchanged for in a market, necessitates commodification. In fact, everything is worthless before becoming a commodity. For the exchange value of an object represents "more value than it has itself" in the form of an external monetary value imposed on the object as it becomes a commodity. That which is not a commodity, such as a tree that has not been chopped down yet, is also valued based on the commodities it can become through a process of production. This, then, creates an economic system highly dependent on extraction, because worthless resources are extracted from nature, and brought into the market as commodities, to gain value. Value creation under capitalism is inherently extraction of surplus value, and nature, through the lens of this value system, is merely dead material awaiting to be turned into valuable commodities.

This extraction is primarily two-fold. It is the extraction of surplus value from someone else's labour by the capitalist, and it's the extraction of resources from nature. The former is the primary source of traditional Marxist critique of capitalism. While a criticism of the latter, the extraction, and depletion, of resources in the natural world, is the focal point for Foster and Clark's ecological critique of capitalism. To fully understand their position, that will be reconstructed later on, it is vital to understand the endlessness of the extraction under capitalism. For capitalism does not merely necessitate a certain amount of extraction, in order to commodify natural resources and turn them into products with an exchange value, but it motivates as much extraction as is profitable. In other words, as long as it is beneficial to a particular capitalist to use the means of production they own to extract resources, they will do so. Thus, the cutting down of the Amazon rainforest, mining of coal or drilling for oil is done, in tune with capitalist principles, for the sake of profit.

This is one of the reasons that expansion becomes intrinsic to capitalism, for expansion is generally speaking profitable. If producing a particular product in one factory is profitable, it is likely that it will also be profitable to set up another factory to double the production. There are exceptions to this, since the overproduction of a product lowers the exchange value of it. Nonetheless, a common mode of operation is to withhold or destroy superfluous products to keep from flooding the market and decreasing the exchange value (Roberts et.al, 2023: 300). This overproduction and continued expansion is not purely done to achieve an ideal of growth and increased profit, for it is also a

necessity to sustain an extraction-based economic model. A system that is predicated on extracting as much as it can is bound to expand in order to avoid running out of resources to extract. This endless extraction, leading to endless expansion, creates a problem on a planet with finite resources and a delicate ecological and climatological system. It is this problem, and the so-called *metabolic rift* this capitalist mode of production has led to, that Foster and Clark primarily focus on in their criticism of capitalism as an unsustainable economic system.

## **2.2. What is the Metabolic Rift?**

Capitalism is not merely accused by Foster and Clark of being in some ways harmful to nature, but of having caused and still causing a harm so fundamental that it represents a rift between human society and nature. This criticism is not new, as they relate their theory of a metabolic rift back to Marx's early works (Marx, 1981: 949). The rift at hand is in the *social metabolism*. The social metabolism is the interplay between society and nature, between human economies and the natural world from which materials to those economies are provided (Foster & Clark, 2020: 8). In simple terms, it is the process in which societies take from nature and give back to nature. The chopping down of a tree, followed by the planting of a new one would be an example of a balance in the social metabolism. This metabolism is historically and geographically situated. Meaning that the metabolism which occurred for the Mayan civilisation differs from the one that applied to Ancient Egypt, which again differs from that of Medieval Europe, or even within societies in these civilisations. Not only did these civilizations have vastly different natural environments to interact with, but they also had different economies and modes of production. These societies, to varying degrees, maintained the social metabolism in a way the capitalist mode of production has not. Through its imperative of maximised extraction from nature capitalism has taken far more from nature than that which is given back. Capitalism is predicated on "appropriation without exchange", which is to say the extraction of more than that which is returned (Foster & Clark, 2020: 45). The very notion of surplus value, or profit, mathematically requires unequal exchange. To take more than is given, so as to end up with more than one started with. This unequal exchange is described as a "robbery system", for the extraction from nature to enrich the capitalists leaves nature poorer and poorer (Foster & Clark, 2020: 46). Capitalism, then, actively causes an imbalance in the social metabolism, shifting resources from nature, deemed worthless, to society in the form of valuable commodities. This imbalance has over time amounted to a rift between humanity and nature.

This rift in the social metabolism is characterised not merely by its historical specificity, in that it was born out of the capitalist system that accompanied the industrialization of the economy, but also by its irreparability (Foster & Clark, 2020: 34). To say that the rift is irreparable is not to say that it is an unsolvable problem. It is not a matter of irreversibility in a physical sense, such as with climate breakdown itself wherein several environmental impacts are feared to be impossible to reverse, except gradually over millennia (Solomon et. al, 2009: 1704). Instead, the rift is something that cannot be

repaired by changes, whether menial or substantial, within the same system that caused the rift in the first place. The capitalist mode of production, with its predication on the commodification of, and thus incessant extraction from, nature, renders the rift irreparable and unbridgeable. The third chapter will examine a proposed version of capitalism by Paul Hawken that aims at repairing this rift, before deliberating on whether such a task is possible or if, per Foster and Clark, it is impossible to do so.

It is vital to note that this rift is not a rift between humanity, as such, and nature. It leads back to a point first brought up in chapter 2.1., about the particularity of capitalism. It is not a system that has always existed. It has, however, for a long time been viewed as an inevitable system, and thus something that is always either existing or on the path to come into existence. Wood calls this the “world systems theory” (Wood, 2017: 19). Relying on that theory would radically shift the meaning of the metabolic rift. For if capitalism is in any way inevitable as the final, most advanced, form of human economies, then the metabolic rift would not merely be between a particular mode of production and nature. It would be between nature and an essentially *human* mode of production. This view would make it impossible for humans to ever live in some form of harmony with nature, at least not while simultaneously advancing our economies. The rift would inevitably occur. Neither Marx nor Foster and Clark conceived of the rift as something this pessimistic. The metabolic rift has taken humanity from being *a part* of nature to being *apart* from nature. Thus, if capitalism is the inevitable end result of human economic activities over time then humanity is bound to tear itself apart from nature. Certainly, a very pessimistic outlook.

This is why it is crucial to keep in mind that it is a predicate for Foster and Clark, upon discussing this rift, that capitalism is a contingent system. Only with this in mind can one fully understand the intent of the line of argument that is about to be reconstructed; Foster and Clark present a criticism of capitalism’s particular unsustainability, not the unsustainability of modern society in itself, or of humanity as such. They make it clear that it is not human nature, but “capital [that] treated all such natural limits as mere barriers to be transcended, rather than boundaries or limits to be respected” (Foster & Clark, 2020: 48). These natural limits can be treated differently, but not in accordance with capitalist principles. Their entire point is precisely the contingency and superfluousness of the ecological and climate crises. The notion that they could have been avoided, and that they still can be reduced. For by being the results of a particular economic system it ceases to simply be a human problem bound to occur, and with no solution. The metabolic rift is mendable precisely because it is an inevitable result only of a particular system. Had it not been unavoidable under capitalism to cause such a rift it would have been reasonable to question where we went wrong. Are the climate and ecological crises merely a result of bad luck or an inability to enact economic theories as intended? However, the metabolic rift as something that follows inevitably from the tenets of capitalism provides an explanation of the environmental crisis that puts humanity in control. That it is the very fact that we are enacting capitalist principles as intended that causes the rift also allows for a possibility to perhaps

mend the rift; by departing from those principles. By showcasing the ways in which acts and practices that have unquestionably harmed the environment fit perfectly with the principles of capitalism, Foster and Clark presents a hopeful take on the climate and ecological crises. A series of crises that are all linked to one particular system, and that can all stand to be remedied if that system is replaced.

### **2.2.1 The Beginning and Development of the Metabolic Rift:**

Foster and Clark date this metabolic rift to the beginning of industrial agriculture, and then intensifying through the Anthropocene (Foster & Clark, 2020: 101). The concept of endless extraction under capitalism, combined with the technological abilities for both extraction and expansion, set the stage for a destruction of nature never before seen. They start by describing the harm of the new form of agriculture that developed in the 19<sup>th</sup> century by appealing to Justus von Liebig. He was a chemist focused on the nutrients in the soil, and the impact intensive farming had on this (Foster & Clark, 2020: 13). He formulated an axiom regarding the chemical sustainability of soil. The axiom, named “The Law of Compensation”, or “The Law of Replacement”, simply states that any nutrients extracted from the soil must be replaced (Foster & Clark, 2020: 14). This was not a political statement in itself, merely a formulation of a natural law to explain that nature cannot be the source of infinite extraction *without* its value diminishing. Extracting more from the soil than that which is returned, in order to manufacture a surplus of nutrients, simply led to the soil getting poorer and poorer until it could no longer provide nutrients; a so-called “soil exhaustion” (Foster & Clark, 2020: 15-16). This law, then, constitutes a case of incompatibility with infinite surplus value. Nature, in its finiteness, does not allow for endless unequal exchange at its expense.

This robbery that the capitalist mode of production constitutes could be criticized on an ethical basis, but also as something impractical and foolish. While the moral criticism of capitalism is far from absent from their analysis, the most significant contribution of their theory is that capitalism is inherently an illogical economic system. For it does not take the necessary measures to preserve the social metabolism. Since the book is written in the context of climate breakdown it becomes less necessary for them to qualify the problem of not maintaining the social metabolism. For it can no longer be viewed as an abstract issue of whether nature ought to be preserved or not. Instead, it has become abundantly clear in the 21<sup>st</sup> century that we simply cannot afford a rift in the social metabolism. Foster and Clark, in no uncertain terms, declares that the metabolism must be regulated “so as to protect the earth for future generations” (Foster & Clark, 2020: 103). On account of this, and the extensive harm the metabolic rift is already causing present generations, they proceed to focus on showcasing that capitalism is an unsustainable model, rather than explaining why we need a sustainable economic model in the first place.

Their point, then, is not primarily that extracting more value than that which is returned, a prerequisite of capitalism, is an immoral act of robbery. Instead, the point at hand is that this robbery violates the rule that Liebig formulated for nature, and this has corporeal consequences. Like Liebig himself, they



criticise the system of private property for the “ignorance” it imposes by acting as if “the Earth is inexhaustible in its gifts” (Foster & Clark, 2020: 18). The climate and ecological crises we are currently in showcases why the Law of Compensation that the metabolic rift of capitalism moved us away from is first and foremost a natural law, that simply has ethical and political consequences. An early example of these consequences highlighted by Foster and Clark goes back to the colonial drain of resources from Ireland. Ireland as an agrarian nation under colonial rule by England, an industrial nation, experienced an expropriation from its soil so severe that the nutrients did not return and the soil continuously worsened (Marx & Engels, 1971: 142). It was characteristic of an “imperial system” as England extracted agricultural resources, such as manure, from Ireland, with Ireland getting “little or nothing in return” (Foster & Clarke, 2020: 120). The climate crisis is merely history repeating itself, this time on a global scale. Foster and Clark illustrate that the shift to industrial capitalist agriculture that begun in the 1840s, which Marx and Engels criticized heavily, has only continued to further extremes. For instance, the global food system takes nutrients from the soil in one place, and instead of eventually returning it to the soil from whence it came it is moved to another part of the world to be sold in a separate market (Foster & Clark, 2020: 14). This is compensated for by taking nutrients from that other part of the world, but that simply constitutes another act of *spoliation*, not an act of compensation. Thus, the problem persists, and, in fact, worsens. “Spoliation” is the term Liebig used to describe the ways in which industrial agriculture left the soil worsened, or even completely ruined, through its excessive extraction and lack of compensation (Foster & Clark, 2020: 14)

The capitalist approach to this clear physical limit is in the first instance to ignore it, after all a system that fundamentally consists of two classes can afford to create scarcity and starvation, because the consequences would just be suffered by the lower class: the proletariat. Of course, this is not possible in the long run, since owning property is no good if food does not grow, so the capitalists rely on an attempt to circumvent this problem. In so doing the problem has only been worsened by several orders of magnitude.

### **2.2.2 The Problem of Expansion:**

As discussed, capitalism does not adhere to the Law of Compensation, it cannot since it is at odds with its internal law of extracting surplus value, and therefore it instead attempts to avoid the problem. This is where the expansive aspect of capitalism comes into play. Marx describes, in various ways, that capitalism is incapable of sustaining itself and thus doomed to end (Balaam & Veseth, 2001: 76). Expansion is the measure capitalist economies resort to in an effort to prevent that doom: “the capitalist economies are compelled to seize colonies and create dependencies to serve as markets, investment outlets, and sources of food and raw materials.” (Balaam & Veseth, 2001: 76). While Rosa Luxemburg, upon emphasising what she saw as capitalism’s inevitable trajectory towards collapse spoke of this form of expansion and domination of new territories as “the final stage of [capitalism’s] historical career” (Luxemburg, 1964: 398). The final stage of a “system [dependent] on the constant

expropriation of external areas” (Luxemburg, 1964: 91). Essentially, expansion becomes the last resort at survival for an economic system that does not adhere to the Law of Compensation that Foster and Clark highlight.

A sustainable approach to production, wherein all that is extracted is returned in some way to ensure that future use-value is not lost, is not seen as necessary to a system that is perpetually expanding. That is the idea behind expansion through the lens of sustainability. To simply make the Law of Compensation redundant, and it works in the short term. For instance, the aforementioned destruction of the soil in Ireland by the industrial-capitalist agriculture of the British Empire was a far greater problem for Ireland than it was for England, because England had, naturally, expanded its empire far beyond Europe. This has allowed capitalism to survive as a system in spite of its unsustainable model for production, and it is precisely this unsustainability that might eventually lead to a collapse of the current commodity system in one form or another. That is because the 21st century presents a new problem for a system dependent on constant expansion, namely that there are no new places to expand to. The whole planet is thus, finally, becoming exhaustible in its gifts, and humanity is disabused of the illusion of human exemption. The notion that we are “exempt from natural laws, or can imperialistically transform them as [we] wish” (Foster & Clark, 2020: 203). The proverbial bill from reckless extraction and expansion over the last few centuries have come due in the form of the climate and ecological crises. It invokes a certain Babel-esque sense of human-wrought apocalypse by angering a force greater than itself, in the effort to itself become the greatest or establish that it already was just that.

Capitalist expansion to new areas cannot, however, be understood only as the capitalist attempt to circumvent the Law of Compensation. That is because compensating for its extraction and decimation of the soil by expanding into a new area and replacing the spoilt soil there with the untouched soil from elsewhere, is not the *modus operandi* at hand. For that would imply that the capitalist economies had some desire to compensate, and that assumption ignores the inherency of growth to this economic system. Simply put, capitalism, as a system, would attempt to grow and expand not just because it must, but because it *can*. Marx notes that “no man of humanity” would wish to see growth be “constant and unremitted”, yet that is precisely what it is the capitalist ideal (Marx, 1887: 373). Growth that occurs whether there is a need for it or not. Growth and expansion, in other words, constitute internal rules that capitalism follow, even when otherwise illogical. A clear example of how illogical these internal laws of capitalism are can be found in the following example:

If we were to imagine that a field with instantly regenerative soil were to be discovered in a capitalist society, and this field was exactly large enough to feed the world’s population in any given moment, then a full utilisation of this field would produce all the food that is needed in the world. Since it instantly regenerates its nutritional compositions it never has to be replaced or supplemented by any

other fields. In other words, it would be the only field in the world where extraction would be necessary. Yet, in a capitalist society this would not lead to the world's other fields remaining untouched, or used in accordance with the Law of Compensation. Instead, all other fields would be used as they are now, for already we have a world in which enough food is produced to feed every person on the planet, and this does not stop capitalism from expanding (Holt-Giménez et al., 2012). That is because expansion is not based on need or utility, but rather possibility for profit. It is clear that the expansion seen across all capitalist industries has not, on the whole, been necessary, and in many cases it has been very dangerous, yet it has happened. The profit incentive of a market-based economy where everything has an exchange value, even if it lacks an immediate use-value due to overproduction, necessitates expansion. Simply put, expansion is too profitable, and too essential for the survival of the individual capitalist enterprise, to not occur.

Capitalism is, thus, insatiable, it is never full, so it will devour everything in its path, if it can be turned into monetary profit. Since it is unsustainable it quickly finishes extracting all it can from an area, and this necessitates expansion to new areas. In the duality of expansion, capitalism doing something simply because it can, as well as in a desperate attempt to maintain a doomed system that runs out of resources too quickly. This leads into the next part, namely about what happens to all the value that is devoured from this expansion, and how that, too, serves as a tenet of capitalism that spells disaster for the planet.

### **2.2.3 The Inevitability of the Rift:**

Foster and Clark goes on to explain two different paradoxes that occur under capitalism, both of which make the metabolic rift an inevitable part of capitalism; the Lauderdale Paradox and the Jevons Paradox. The first one, the Lauderdale Paradox, relates to the incessant accumulation of capital that occurs in the commodity system. This paradox illustrates how an increase in private riches would decrease the common wealth in a society, because the latter requires scarcity (Foster and Clark, 154). For instance, if someone were to monopolize water in a society and sell it, as opposed to letting everyone drink from the river, the total monetary value and capital of the society would grow, because the river is now a source of profit. The capitalist economy has grown stronger as a result. However, more people would go thirsty as a scarcity would have been created, and as such the society is poorer in a more real sense. This does not merely lead to scarcity which the capitalist tolerates, but also artificial scarcity that is specifically *aimed at*. James Maitland, the eighth Earl of Lauderdale, pointed out that having growth in individual wealth as a goal in fact motivates artificial scarcity, and he lists examples of destruction of resources such as the burning of spiceries in Dutch colonies, or the destruction of tobacco on slave plantations in Virginia (Foster and Clark, 155). A contemporary example of this would be food waste in general, or the destruction and limited sharing of Covid vaccines (Eaton, 2022). Thus, the capitalist system not only extracts more resources from nature than

what is sustainable, and expands whether more resources are needed or not, but it also disposes of usable products and resources in order to maintain enough scarcity to keep the exchange value up.

Yet again, then, the devouring of nature at an extraordinary pace is motivated by an internal imperative of capitalism. Foolish as this approach sounds, and undoubtedly is, it does follow logically once one accepts the notion that the important value to maximize is not *use* value, but *exchange* value. For the exchange value of a product depends not on its individual utility as a product alone, but also on its availability. Thus, capitalism cannot approach nature in a useful way, but must instead extract, expropriate and monopolise all that is useful about nature so that it can distribute it at the highest possible price, even when that requires an intentional destruction of nature or the products fashioned from it.

The Lauderdale Paradox illustrates two very important points about capitalism in relation to ecological sustainability. Firstly, that, just like the imperatives of extraction and expansion, accumulation in the hands of the few is inherently unsustainable. Secondly, that nature, in order to be preserved, cannot be viewed for its exchange value. The second point is particularly interesting as it relates to a tempting criticism against Marxian ecology and anti-capitalist arguments for sustainability in general. Namely that viewing nature as useful, rather than something of inherent value, makes a true ecological project impossible under socialism. While there are certainly arguments to make for nature to be seen as having an inherent value separate from its value to humans, Foster and Clark demonstrate why the imperative of use value is not necessarily a hinder to an ecological project.

Firstly, it would be a gross oversimplification of socialism to state that nature has no worth outside of its utility at all. For Marx, ownership of land is as absurd and irrational as ownership of humans. That is because it is, as British socialist William Morris puts it, an effort to make nature our slave and treat it as something outside of ourselves (Morris, 2003: 154). Nature cannot be viewed, from the Marxist perspective, as something entirely void of inherent value because it is not wholly separate from us. That is to say, it is not wholly separate from us *before* the metabolic rift. The very occurrence of the rift implies that humanity and nature were not separate to begin with, but rather become so through the antagonistic approach capitalism introduces towards nature. However, the relevant question is not so much if Marxism as a whole can view nature as meaningful on its own, but rather if the specific economic system it presents, one which focuses primarily on nature's use value, can treat nature with the care it requires in a world where that is becoming increasingly vital.

This is where the Lauderdale Paradox, with its sharp distinction between use value and exchange value, presents a clear way to identify the foe of sustainability. Use value is diametrically opposed to exchange value (Marx, 1887: 72). It is self-evident that violating von Liebig's Law of Compensation by extracting more than is returned is not particularly useful. Everyday adage concerning the term use can easily lead to the misconception that the fundamental problem at hand is not the specificities of the

capitalist system, but rather how humanity views nature as something with a use value, independent of any economic system. This misconception would lead to the exoneration of capitalism. Instead, humanity, ever since we began to fashion tools out of sticks and rocks, would be viewed as the problem. However, it is the view of nature through the lens of exchange value, with the imperative of maximizing accumulation through infinite extraction, expansion and growth that has led to the fast-paced destruction of the natural world. That is the point Foster and Clark make, and what makes the metabolic rift inevitable under capitalism.

#### **2.2.4. The Futility of Technological Advancements:**

The second paradox they present, the Jevons Paradox, aims at explaining why unsustainable growth is bound to continue under capitalism in spite of any and all technological advances. Capitalism's purported ability to innovate is easily cited as a strength of the system. While the notion of capitalism being an innovative system could certainly be debated, Foster and Clark does not view it as necessary to do so. This is because the Jevons Paradox renders innovation unhelpful, as far as sustainability is concerned, under capitalism. The paradox, formulated by the economist William Stanley Jevons, states that innovations that increase efficiency in production do not, under capitalism, spare resources or decrease the total production (Foster & Clark, 2020: 245-246). Meaning that inventing more resource-effective ways to produce commodities would not lead to less resources being depleted from nature. This might sound counterintuitive, but the logic behind it is based in the relation between the *input* needed for the production of a particular product and that of the *total output* of products. In simple terms, the amount of ingredients required, that is the input, can affect the output; the amount of products made. If a company has enough resources to produce 100 examples of a certain product, then they would do so. However, if technological advances allowed for half the resources to be spent on producing each product then the capitalist would not elect to produce 100 products and leave the remaining resources untouched. Instead, in tune with the internal law of growth, the capitalist would now produce 200 products instead. For when the internal principles of capitalism lead to maximized output at any time, then it does not matter how few ingredients are needed. Capitalism, simply, will not half its production input when a new technology allows for double the output of previous technologies; instead the input will stay the same in order to enjoy double the output (Foster & Clark, 2020: 246).

Foster and Clark are not arguing that technological advances never have sustainable effects. For instance, certain resources can become outdated and outcompeted under capitalism, and if those resources have a harmful effect when used it can be advantageous to the environment that other resources are used instead. However, that would be a distinction between the quality, not quantity, of resources. The Jevons Paradox does not state that technological advances cannot lead to less harmful ingredients being used in producing products, but rather that they will not lead to less products being made. If a capitalist owns a piece of land filled with a resource that has been rendered redundant due

to technological advances then the internal logic of capitalism would not embrace simply leaving that piece of land alone. As long as any piece of nature can be turned into profit, that is what the capitalist will aim to do with it. Therefore, efficiency is redundant as far as total output of products, and thus total amount of extraction from nature, goes.

It is, for instance, theoretically conceivable that a hypothetical, highly efficient source of renewable energy flourishes in the market and outcompetes fossil fuels. That would not go against the internal laws of capitalism, and it has been seen many times before that a new technology outcompetes an old one. Such as with the invention of the steam engine. The problem with this scenario is not whether such a technology is likely to exist or likely to outcompete the fossil fuel industry into oblivion, but rather how it would not lower the unsustainable rate of production. The Jevons Paradox explains why technology under capitalism cannot enforce sustainability, because even though each steam engine from James Watt's onward has used coal more efficiently than the last, the imposed imperative of growth has led to a "greater *absolute* use of coal" (Foster & Clark, 2020: 245). The point Foster and Clark make is that capitalism renders the positive environmental impact of green technologies partly, or completely, hollow. For if something requires half the amount of extraction from nature, then capitalism will simply produce twice the amount of products. Then, in accordance with the Lauderdale Paradox, it might throw out half of it to avoid flooding the market. Essentially, attempting to employ greener technologies under capitalism to save the planet becomes like running a 24-hour race and thinking that you'll get to finish the race earlier if you only run that little bit faster, but no matter how fast you run you'll need to run for 24 hours, because that is the imposed imperative. Such is the growth imperative under capitalism, the race will not shorten if we find faster ways to run it.

### **2.3. On Mending the Metabolic Rift:**

Lastly, Foster and Clark discuss how this rift, irreparable under capitalism, can be mended. They do this by first arguing that the two most commonly discussed alternatives to fossil fuel capitalism, green capitalism and promethean "socialism", are unsustainable. Then they present their proposed solution to the metabolic rift: eco-socialism (Foster & Clark, 2020: 190). The third and fourth chapters will investigate this further. First by putting Foster and Clark's ecological critique of capitalism to the test against Paul Hawken's theory of a workable form of green capitalism in the third chapter, and then by explicating the specifics of eco-socialism more thoroughly in the fourth chapter. To do this it is important to first explain Foster and Clark's view on sustainability itself, and the requirements an economic system would have to meet in order to mend the metabolic rift.

The criteria for sustainability leads back to the beginning of what led to the metabolic rift in the first place, the Law of Compensation and capitalism's violation of it. A sustainable economic system is thus one that adheres to the Law of Compensation. However, this can be an incomplete way of measuring the sustainability of a modern economic system as the Law of Compensation, while having certain universal characteristics, was developed to address a problem in the industrial agriculture in the 1840s

(Foster & Clark, 2020: 14). Undoubtedly, the principle is no less relevant today, but for practical reasons it can be more useful to measure economic models against something more comprehensive than this one principle. That is why, for the continuation of this analysis, I will measure the sustainability of economic systems by the criteria set by the theory of a *doughnut economy*. Doughnut economics is a concept developed by Kate Raworth, and rather than being a specific economic model of its own it is a means of measuring the merit of economic models (Raworth, 2017: 3). Essentially, it sets the limits that an economic model can operate within to achieve sustainability. The reason this approach can be used, even if Foster and Clark do not explicitly use it, is that it can be thought of as an expanded, more comprehensive, version of the Law of Compensation. A series of physical limits that make up an *ecological ceiling* that must not be crossed (Raworth, 2017: 42). However, in addition to this ceiling, that the Law of Compensation also has in the form of limiting more extraction than can be returned, it also adds a floor. A social foundation that must be laid to ensure needs are met, and so it serves as “inner boundary” to measure economic models, where the ecological ceilings function as the outer boundary (Raworth, 2017: 254). The needs that must be met, in order to ensure no “short-falls in human well-being” are “essentials such as food, education and housing” (Raworth, 2017: 39). This aspect is implicitly taken for granted by Foster and Clark, as socialist thinkers they did not deem it necessary to explicate too much that social needs should be met. Thus, there is no contradiction between them and Raworth, but the latter makes the totality of what a sustainable economic model needs more explicit. Therefore, that will be the measure of the four main economic models that Foster and Clark touch upon.

Those four are capitalism as it currently exists, promethean “socialism”, green capitalism and eco-socialism. The latter two are conceived ways of making the former two more sustainable, so analysing the first two models is less necessary. Capitalism as it exists now, a fossil-based capitalism, has empirically been unsustainable. This can be seen clearly in the ecological ceiling that Raworth presents. It consists of the following nine ecological consequences that ought to be avoided: climate change, ocean acidification, chemical pollution, nitrogen and phosphorus loading, freshwater withdrawals, land conversion, biodiversity loss, air pollution and ozone layer depletion (Raworth, 2017: 41-45). These are not consequences that Raworth invented out of thin air, but rather put forth by the recognised scientists Johan Rockström and Will Steffen (Raworth, 2017: 256). More interestingly, however, they are all observations of ecological harm that have occurred, to various extents, under capitalism. Therefore, capitalism as it has currently existed is undoubtedly unsustainable, precisely as Foster and Clark conclude.

The second economic model does not need much deliberation either, for promethean “socialism” also has empirical evidence to support its unsustainability. Promethean “socialism”, primarily associated with the Soviet Union and both Maoist and post-Maoist China, is a socialism, in a generous sense of the word, characterised by its focus on growth. It is predicated on the idea that the search for economic

growth, maximized production and a dominance over nature can, and should, be carried out by the proletariat upon seizing power (Foster & Clark, 2020: 272-274). Simply put, it practices a similar extraction from nature. The relation between humans in the production process is vastly different from the capitalist model, because the workers control the means of production among themselves, but the relationship between humans and nature is less altered. Thus, the metabolic rift remains. This illustrates an important point of Foster and Clark; that capitalism is not conceived as the *only* system that can create a rift, but that it is *a* system that cannot avoid the rift. It is worth noting that Foster and Clark scarcely view promethean “socialism” as a legitimate form of socialism, as the *eco* in eco-socialism is inherent in socialism as such. To Foster and Clark, any socialism is bound to be ecological to be socialist. For the metabolic rift, as mentioned earlier, constitutes an alienation from nature, and what is socialism if not the reversal of all the alienations caused by capitalism?

This leaves green capitalism and eco-socialism to be analysed more thoroughly in light of Doughnut Economics. To analyse green capitalism properly it is important to first present a theory of a proposed version of green capitalism.



## **Chapter 3: The Illusion of Green Capitalism:**

This chapter will introduce Paul Hawken's version of green capitalism, which he refers to as natural capitalism. Then I will examine whether his theory is capable of circumventing the problems highlighted by Foster and Clark to a great enough extent to warrant sustainability in accordance with Raworth's requirements. This would then attempt to answer the question of whether capitalism can be sustainable. If green capitalism, or at least the version of green capitalism to be presented, fails to meet Raworth's requirements for sustainability it strengthens Foster and Clark's theory, that capitalism is inherently unsustainable and incapable of mending the metabolic rift.

### **3.1. The Requirements of Sustainability:**

Firstly, a further elaboration of the requirements to be met must be done. Doughnut Economics, as mentioned, operate with nine ecological ceiling predicated on physiological limits that are unsafe to cross. As of 2023, six of these nine planetary boundaries are deemed to have been crossed, and on the current trajectory we are moving further and further from the safe operating space (Richardson et.al, 2023). Of the three that remain to be crossed, ozone layer depletion, nitrogen and phosphorus loading and ocean acidification, particularly the latter is on the verge of crossing the ecological ceiling (Richardson et.al, 2023). However, as so many of the boundaries have been exceeded already it is not useful to evaluate an economic system based on whether its immediate implementation would lead to an environment within these bounds or not. Naturally, any economic system would inherit the planet as is, and the environmental challenges this brings. Instead, the economic systems will be examined based on whether or not their internal principles, if practices consistently, would lead to further movement past the ecological ceilings, or if they can allow for the social metabolism to stand still or even tip towards a balance over time. In other words, can green capitalism, or eco-socialism, mend the metabolic rift that has already occurred? It will be less a question of if these physical processes can practically be reversed, and more a question of whether these economic systems can enact the initiatives one might hope could yield the best chance at reversing, or in the very least not worsening, these issues.

Raworth presents the term "growth agnostic" as one of the primary attitudes that a sustainable economic model would have to adopt (Raworth, 2017: 207). A problem with the current economic model that she illustrates is the focus on Gross Domestic Product (GDP), that is to say the total monetary value that a country possesses in the form of their goods and services, as the "primary indicator of a nation's economic success" (Raworth, 2017: 209). Her criticism of GDP is akin to the one offered by the Lauderdale Paradox. For GDP, being predicated on exchange value, is an illustration of illusory wealth rather than the real material wealth found in use value. A society is not meaningfully wealthy for having a high GDP, in the same way that a person having one very expensive coat could still not clothe more than one person at a time. A shift to measuring corporeal, rather than monetary, value would be a shift away from GDP as a primary measurement. This would

also represent a move away from the maximization of monetary value that an approach like that incites. As such, a shift from GDP is an effort to achieve the goal of limiting growth, which again is held as a necessary step to avoid the further crossing of ecological ceilings. Being agnostic to growth is then the view that growth is not inherently positive or a sufficient measurement of economic progress.

The limitation of growth as a measure necessitates another measure: redistribution. The conceived advantage of growth is that it can be combined with unequal distribution because the excess of value “will even it up again” (Raworth, 2017: 139). Naturally, this does not actually occur, on account of all the surplus value being accumulated by the capitalist, for that is, as presented in the previous chapter, the role that the capitalist, by definition, plays in the production and consequent distribution process. Raworth is aware of this, and notes that capitalism leads to wealth becoming “ever more concentrated” in the hands of the few (Raworth, 2017: 144). Thus, the limitation of growth becomes an opportunity to free ourselves from the illusion of its proclaimed ability to leave everyone with enough, and this allows for the focus to be shifted to a fair and equitable distribution. This distribution is not primarily needed to stay within the ecological ceilings, but rather to establish the social foundation that makes up an equally integral part of Doughnut Economics. As Raworth notes, half of the world’s population lives in countries that “[transgress] both side of the Doughnut’s boundaries”, so the current economic model, that is to say modern capitalism, has failed to meet the requirements in both ends of the scale (Raworth, 2017: 43).

A third measure Raworth focuses on, and that will be particularly useful to have in mind for the exploration of the sustainability of green capitalism and eco-socialism, is the shift to a perspective of the planet as a set of complex systems (Raworth, 2017: 112). Primarily, this constitutes a concern for the fragility of the earth. Crossing planetary boundaries is a less monumental task than it might appear, and relatively small acts can have cascading effects. Changes that might be incremental over time, can “lead to sudden collapse” (Raworth, 2017: 112). The consequence of the awareness that nature is delicate, for the construction of economic models, is that it must be treated as such. The social metabolism must be governed in such a way that these devastating effects do not occur. In other words, any sustainable economic model must be cautious in its interactions with nature, so as not to destroy it. Raworth deliberates on economic equilibrium, but it is her eventual focus on the equilibrium not in economy itself, but rather *between* economy and nature that is the most valuable to the analysis about to be conducted. It is “the dance of social-ecological systems”, or what in the previous chapter was referred to by the Marxian term of the social metabolism, that is central to the pursuit of a sustainable economic model (Raworth, 2017: 136).

Then, the economic models of green capitalism and eco-socialism can be explored in light of Doughnut Economics as laid out here. Primary to the following analyses will be the nine ecological

ceilings and the social foundation; the effort to stay within the bounds of both through such measures as an agnostic approach to growth, a more equal distribution than has occurred in modern society and a respect for the fragility of nature.

### **3.2. Natural Capitalism:**

Perhaps the most simplistic way to describe a project of green capitalism would be as follows; an effort to create a sustainable economy while simultaneously upholding a system of private property. Thus, the project would fail either by being unsustainable or by abolishing, or altering too radically, the system of private property. Lastly, the project ought also to be practically feasible, that is to say the measures that are suggested should be possible to carry out and they should yield the outcome laid out. Before exploring the merit of Hawken's particular theory, it is necessary to explain it.

Firstly, Hawken depicts capitalism as he understands it. He highlights a series of tenets of capitalism as it traditionally appears. Capitalism, according to Hawken, is predicated on economic growth as the measure of progress, a free-market, competition, concerns for society as balanced against the aforementioned imperative of growth, and resource shortages as a motivating factor for the creation of substitutes (Hawken, 1999: 6). This is what he presents as conventional capitalism. However, instead of explaining capitalism as such, he has listed a series of non-defining characteristics. The aspects he listed are, to a great extent, *consequences* of the mode of production and relations of ownership that fundamentally make up capitalism. It is certainly true that capitalism conventionally has the traits he listed, and several of them are also present under capitalism by necessity. However, they are nonetheless not what makes capitalism into capitalism.

For the particular relation between the capitalist and the worker, maintained through the ownership of private property for the former and a dependency on wages for the latter, is not presented as a foundation of the system he outlines. From the presentation of capitalism made by Hawken it is possible to conceive of a democratic system in which people continuously vote for these tenets to be upheld, and it would then qualify as capitalism. However, the vital aspect missing from Hawken's depiction of capitalism is the relation between the capitalist and the worker, for it is the asymmetry of that relation that motivates the aforementioned tenets. Without ownership of private property, the capitalists could not have freely enforced the principles that benefit them. Likewise, had the workers not been dependent on selling their labour for wages, the capitalists would have lost their ability to be capitalists, and the system would cease to be. It seems, then, that Hawken has made the error of conflating the *is* of predication for the *is* of identity. The former is a way of naming a quality something has, such as "London is a large city". It does not properly identify the thing itself, merely a quality it has. The latter could be illustrated in the example "London is the capital of England", and it identifies something by naming its *defining* characteristic.

A pair of crucial aspects of capitalism that he has failed to capture is how incentives function under capitalism, as well as the system's tendency towards monopolisation. The first is a direct consequence of the mode of ownership under capitalism. For by having a system built on private property one ends up with economic actors who are motivated by wages if one does not own private property, and by increased capital if one owns private property. The latter make up individuals who are economic actors of significant influence. In fact, an owner of a mean of production will under capitalism, within the guidelines set by legality and competition in the market, do as they please with their property. Thus, economic activity is motivated by individual actors with great power, precisely because of their ownership. This incentive will be relevant later on, as natural capitalism would need a way to incentivise capitalists into acting according to its revised principles rather than the principles of conventional capitalism.

The second aspect that Hawken's brief presentation of conventional capitalism does not take into account is, as mentioned, its tendency towards monopoly. The companies or industries that win the competition that capitalism facilitates through the market are bound to get closer and closer to achieving a monopoly. Monopoly capitalism is a stage of capitalism wherein companies and industries dominate the market so completely that they effectively hold a monopoly, and it is usually viewed by Marxists as starting in the late 1800's (Sweezy, 1990: 297). This is particularly relevant as the fossil fuel industry, the antagonist of all green projects, currently holds a monopoly under the present economic system. In fact, this industry became so powerful and influential under capitalism that Andreas Malm thought it necessary to talk of fossil fuel capitalism, or his term *Fossil Capital* (Malm, 2016). It is the effective monopoly that the fossil fuel industry has achieved in the energy sector that has allowed it to defend itself against increasing awareness of the climate crisis. This monopoly will be further explicated later as it will be explored if a green capitalist project could conceivably challenge this monopoly and begin a phasing out of the fossil industry.

All this is not to say that Hawken's theory can already be dismissed on account of the incomplete presentation of conventional capitalism, but it is worth noting as it could lend itself to further issues in his conception of natural capitalism. It is now necessary to introduce Hawken's alternative. Fundamentally, Hawken suggests four changes to the current capitalist system (Hawken, 1999: 10-11) These are:

1. A radical increase in resource efficiency in the production process, so as to reduce the amount of natural resources spent.
2. The reduction, or elimination, of waste by implementing a system predicated on reusability and recycling.
3. A shift in the conception of value. Moving from quantity-based to quality-based value to reduce overproduction.

#### 4. Increased investment in natural capital by protecting and restoring nature.

The thought-process at hand is that these four changes would turn the current capitalist system into a sustainable one. Akin to Foster and Clark this is also based on the notion that the problem with modern capitalism is that it extracts more from nature than that which is sustainable. Thus, Hawken also views conventional capitalism as unsustainable by virtue of its internal laws, rather than as a system where unsustainable practices happened to have occurred. However, from there they differ. Foster and Clark primarily view the internal laws of capitalism as incompatible with any holistic ecological concern, whereas Hawken is more concerned with capitalism as lacklustre. No amount of added imperatives, or reforms, would make capitalism sustainable in the eyes of Foster and Clark. For the problem is not a lack of sustainable imperatives, but rather the existence of unsustainable ones. Abolition, then, becomes the only path to alter the system towards sustainability. This is not the case for Hawken who hopes to keep the capitalist system, but make these four primary adjustments. Thus, the question at hand becomes whether capitalism is in need of adjustment or abolition to meet the requirements for sustainability.

##### **3.2.1. Increased Resource Efficiency and Waste Reduction:**

It is undoubtedly the case that a reduction in the amount of natural resources spent in the process of production would go to great lengths to make for a more sustainable system. However, Hawken's first suggested adjustment is to reduce the amount of resources used *through* radically increasing the efficiency in the production process. This means that two questions need to be answered. Firstly, is this radical increase in efficiency feasible, and, secondly, would such an increased efficiency substantially lower the amount of resources spent in production?

The answer to the first question mostly seems like a straightforward one. Hawken's book was written in 1999, and this paper is written in 2023. Thus, nearly a quarter of a century of empirical evidence is available to determine whether the efficiency across industries has radically increased or not. For instance, the productivity in the US economy increased by 64,6% from 1979 to 2021, after it had already increased by nearly 120% in the 30 years leading up to that (EPI, 2022). These numbers do not refer to a reduction in the amount of materials needed to produce a certain quantity, but it nonetheless implies that fewer materials are needed than before. For what the numbers show is how much is generated "in an average hour of work" (EPI, 2022). This significant increase in overall productivity infers two things; that technology has become drastically more resource-efficient, like Hawken assumed, and that, on the whole, this efficiency has not primarily been used to reduce the production process, but rather increase the total output of the production. Hawken postulates that "90 to 95 percent reductions in material and energy" required to provide for "the services that people want" is possible through "technological leap[s]" (Hawken, 1999: 176). Whether or not Hawken's estimates are entirely accurate, there is rendered no doubt that a substantial increase in production efficiency is feasible.

However, alongside the increased efficiency, the total production has increased as well. As such it becomes an empirical example of the Jevons Paradox; that increased production efficiency under capitalism does not lead to a corresponding reduction in materials used, because the total production merely increases. This first change suggested by Hawken does not take the Jevons Paradox, as mentioned by Foster and Clark, into account. Thus, even if one were to get the increased efficiency his system requires, the internal laws of capitalism would motivate increased output over decreased input. It would not be sufficient to argue that the previous imperative of growth is no longer relevant as it is replaced by Hawken's new imperative. The reason for that is that capitalism does, indeed, not function like a legislative body that gets together and votes on which principles, or laws, that should apply. The imperative of growth is not something that has been voted upon and that can be replaced, within capitalism, by a mere agreement to prioritise the principles of natural capitalism. Instead, the principle of growth is, as mentioned, a natural consequence of the system of ownership under capitalism.

Private property motivates the highest possible production using that property, so as to maximise capital. Furthermore, even an agreement among the most powerful individuals of the bourgeoisie to adopt this new principle would not be sufficient. That is because the ruling class under capitalism consists not of particular individuals who maintain power regardless of their actions, such as the kings and nobles of feudal Europe, instead it consists of whomever owns the means of production. Due to the monopolising tendency of capitalism, the means of production will be more and more concentrated in the hands of those who generate the most capital. Thus, if the most powerful capitalists were to suddenly decide to adopt the principles of natural capitalism in order to protect the environment, they would fail to keep up a production that could rival whoever chose to not limit themselves to those principles. That is a key point of the Jevons Paradox. The paradox does not exist because people are fundamentally greedy and thus they will always maximize production output to generate as much profit as possible. Instead, the paradox exists because of the way the market operates, by motivating that greed. All it takes is one actor maximizing production, and the others are forced to follow suit. It is the system, not human nature, that necessitates this incessant extraction of materials from nature, even in the face of ever-increasing efficiency. Precisely for this reason it is difficult, if not impossible, to alter this while still operating within the system, such as green capitalism does.

The same applies to the second change Hawken wishes to implement. The ability to reuse materials will not subtract from the total production. For the point made by the Jevons Paradox is that capitalist production will strive to be maximized rather than reaching a fixed sum as effectively as possible. Just as "the lessening of toil" is not the goal of "machinery under capitalism", neither is decreased extraction from nature (Foster & Clark, 2020: 246). One could continue the example from section 2.2.4., where 100 products became 200 products since half the amount of resources were necessary due to technological advances. If the materials needed for 50 of the initial products were to be reusable, then an additional 50 products could be added to the final sum of products made with the

same amount of resources. In a case like this, the implementation of Hawken's first two changes will have made 100 products into 250 products with the same amount of resources extracted from nature. Capitalism has merely become more efficient, not more sustainable. For with no change in the system of ownership there is no motivation for capitalists to choose to make 100 products when technological advancements and reusability would allow for them to make 250 products.

### **3.2.2. A Shift From Quantity to Quality:**

One conceivable way to reduce waste is to improve the longevity of products. Making products last longer would, naturally, require fewer products. Seemingly this avoids the Jevons Paradox as capitalists will not be motivated to make 250 products if only 100 is needed in the market. For instance, if cars were made with greater longevity then fewer cars would have to be made as the market for cars would shrink. If one car could last a person for 50 years, then naturally they would purchase fewer cars in a lifetime than if cars on average lasted for 5 years due to poorer quality. The capitalists might initially wish to maintain a maximized production, and thereby extraction, but this would diminish over time as they would not be able to sell too many people a new car, as their old one still worked well. This would represent a shift from quantity-based production to quality-based production, and it amounts to the third change proposed by Hawken (Hawken, 1999: 10-11).

This suggestion appears to solve the problem of the first two, for it would reduce the total output. The idea at hand is "a fundamental change in the relationship between producer and customer" (Hawken, 1999: 10). Thus, the aforementioned reduction in resource expenditure to provide people with their wants takes not only technological advances into account (Hawken, 1999: 176). Customers will, upon a shift from quantity to quality, no longer want as many products as they now appear to want, for fewer are needed to quench the same desire. Thus, a shift to a quality-based production could go a long way in reducing the production output, and as such the extraction from nature.

However, this also runs into a problem, for it ignores the way in which property relations under capitalism motivates not only growth, but capital valuation. Arguably more meaningful economic growth would occur in a society with a small number of good products than a greater number of poor products, but this is not the economic growth that applies under capitalism. Instead it is merely a matter of the accumulation of capital. Furthermore, it is not a matter of capital accumulation for all of society, but for the individual capitalists determining the production carried out by the means of production they own. Arbitrary principles for how to use the means of production cannot be imposed by those who do not own said means of production. That is why, yet again, Hawken runs into the problem of not changing the system of ownership. For the capitalists will attempt to maximize their profit, and this is best achieved through a greater focus on quantity-based production than what Hawken would want. This can be known because it is precisely what the most successful capitalists are currently doing under a system that is designed to maximize profit; they are focusing on quantity to a great extent. The existence of forty-two different versions of the iPhone, a product to have existed

for less than twenty years, is a clear example of the profitability of quantity-based production (Carey, 2023). Products are frequently designed to last long enough to be worthwhile to purchase, but short enough to necessitate an eventual replacement.

If the change from quantity to quality were to occur, it would likely require a change from a focus on exchange value to one of use value. For if the quantity were to be reduced then the quality would need to yield an increase that manifests itself in a high enough exchange value to replace the total exchange value of all the products it has replaced. That is to say that if a company were to decide to produce fewer products than before, and as such accommodating the quality-over-quantity shift, they would only be motivated to do so if the new products had a greater total exchange value than the old one. For only this way would the shift generate more value as *recognised* by the capitalist. Certainly, there are several arguments to be made that a shift to quality-based production would add a lot of value to society, but that value would be measured in use-value; a non-existing factor to the capitalist. Thus, in order to focus on quality over quantity, it would be necessary to move away from a model based on exchange value over use value. Yet again, this leads to the problem of motivating the shift in production under capitalism. Use value does not translate to capital accumulation in the same way that exchange value does, and therefore the capitalists would by the nature of their role in the system not be motivated to change this.

### **3.2.3. Natural Capital:**

The final change Hawken wishes to implement is the protection and restoration of what he calls natural capital. He presents multiple forms of capital. These are financial capital, human capital, manufactured capital and natural capital (Hawken, 1999: 4). An increased prioritising of natural capital would protect nature, as natural capital is nature itself and the materials in it. This is, thus, a particular embodiment of the concern for the fragility of nature that is, perhaps, the most central of Raworth's measures to stay within the bounds of sustainability. Likewise, the metabolic rift is the result of natural capital being entirely ignored in favour of financial capital under capitalism. It could be said, then, that a sufficient valuation, and consequent protection, of nature as natural capital, if possible within the system of capitalism, would place Hawken's approach within the requirements of sustainability. However, a prioritisation of natural capital would contrast the entire point of capitalism, for it incentivises specifically through financial capital, and thus prioritises it over *all* other forms of capital. This is not to say that there is never concern for the other types of capital under capitalism, but rather that they are only given value as far as they can be exchanged for financial capital either directly or indirectly. In other words, natural capital is valuable to the capitalist if it can be turned into products. These products, or manufactured capital, are valuable as far as they can be sold in a market. Whereas human beings are valuable to the capitalist as workers, for it is their labour that the capitalist is interested in. Nature, then, cannot be given a particular value under capitalism that is not assigned to it in the form of the financial capital it can eventually manifest itself as to the capitalist.



All the changes proposed by Hawken do well in creating a system that would hypothetically operate within the space allowed for by Raworth's Doughnut Economics. If the materials spent in the total production in society is reduced by virtue of increased efficiency and reusability, then that would make the economy significantly more sustainable. Likewise, a shift to quality over quantity and a protection of natural capital would do the same. However, as shown, none of these changes are possible within a capitalist system. The Jevons Paradox would render increased efficiency and reusability void, for the maximisation of production, for the purpose of a maximising profit margins, would still occur. A shift in the value system is also incompatible with an intrinsic capitalist principle, as exchange value is the only lens through which value presents itself to the capitalist. Natural capital, too, cannot be imposed as it is only through nature's potential to become something of monetary value that it is valued in the first place. All of Hawken's suggestions are affected by the same problem, namely that they are attempts to impose new, sustainable principles unto capitalism without doing away with the established principles. The initial problem, that of an incomplete understanding of capitalism by Hawken, led in the end to a series of assumptions about the possibility to implement changes that cannot be implemented.

Therefore, the project of natural capitalism would end in one or two ways. Either it would fail to implement any of the changes due to it not removing the obstacle of private property, or it would successfully implement these changes through a process of abolishing private property. The second of which, the one that conceivably could succeed, would nonetheless fail as it would cease to be a capitalist system. Thus, sustainable capitalism is not a possible system.

### **3.3. Why Has the Fossil Industry Not Been Dismantled Under Capitalism?:**

Beyond the larger systemic changes proposed by Hawken, and required by Raworth, it is useful to also look at one particular measure that is more specific: the phasing out of the fossil industry. One of the nine ecological ceilings relate to climate change, and it is undoubtedly necessary for a sustainable economic model to be compatible with a phasing out of that particular industry (Raworth, 2017: 9). Calls for a green transition under capitalism have been consistent in the two decades since Paul Hawken first wrote about natural capitalism. Yet, the fossil industry has remained prevalent in modern society. If phasing out the fossil industry is possible under capitalism, as must be the case for any green capitalist project, then why has it not happened yet? The lack of a fossil fuel industry, or in the very least a powerful one, is not in itself incompatible with any of the principles of capitalism. Instead, it is the monopoly the fossil industry has garnered under capitalism that has made it difficult to remove.

The power that comes with owning means of production, and therefore controlling labour, is versatile. Owning a facility that extracts oil would not make the owner only influential within that particular field, because the money made from oil could be used to influence any and all fields; that is the versatility of capital. The system of private property makes "social power... the private power of

private persons”; this means that individual capitalists become harbourers of significant power in society, including political power (Marx, 1887: 85). The capitalists of the fossil industry have proven capable of wielding that power.

The fossil industry knew, already in the 1970’s, that fossil fuels were inextricably linked to climate change, and that these changes to the earth’s atmospheric temperature would spell disaster for humanity. Yet, they kept this information secret (Rannard, 2023). That is certainly unethical and critique-worthy, but it is not nearly as worrisome as the misinformation they used their power to spread. From funding biased research aimed at debunking climate science to sponsoring popular platforms for climate deniers (Rannard, 2023 & Ahmed, 2014). The fossil fuel industry has waged a misinformation campaign to preserve itself through climate denialist marketing in media, or just direct ownership in media companies (Ahmed, 2014). They also shifted the blame, from themselves to the general public, through the invention and popularisation of the term “carbon footprint” by British Petroleum; a concept that still holds a great space in the public consciousness (Solnit, 2021). Furthermore, the fossil fuel industry conducts lobbying to directly influence politicians to make decisions concerning legislation within the energy sector, among other areas, that are not limited by a lack of public support (Browning, 2022). Finally, and most egregious of all, the fossil fuel industry has violently opposed resistance to its harmful projects, such as when Shell instigated a violent government response to the demonstrations against their activity in the Niger Delta (Amnesty International, 2017). It is all these actions that makes it necessary to not only speak of capitalism as a problem, but also the fossil fuel industry specifically. An industry fully enabled by the capitalist system that it arose to a monopoly within.

Undoubtedly, legislation is implemented that the fossil fuel industry and its actors do not support; there is no shortage of examples of legislators not acting in the fossil fuel companies’ interests. Such as the U.S. Supreme Court decision that communities could sue fossil fuel companies for the harm environmental destruction had caused them (McKibben, 2023). However, there is a massive leap from legislation opposing the fossil fuel industries’ interests and legislation that phases it out completely. Climate policies having been implemented in spite of the fossil fuel industry shows that it is not possible for their lobbying to stop any and all policies amounting to a green transition. However, the transition itself, with its phasing out of the fossil fuel industry, has so far appeared equally impossible. For the fossil fuel lobbying and hold on power, while not total, has still proven sufficient enough to sustain itself in spite of increased awareness of the dangerous warming of the earth’s atmosphere. It appears reasonable to assume that the present system of monopoly capitalism, with an energy sector skewed towards the fossil fuel industry as the monopoly, cannot enforce the green transition Hawken hopes it would.

The fossil fuel industry's monopolization takes on several different forms. One such form is that the ten largest energy companies in the world are all fossil fuel companies, centring far more power around fossil fuel production than production of renewable energy (Ahmad, 2023). Another way in which the monopolization occurs is by how the power is heavily concentrated not only on the industry, but on a few companies in it. For instance, the two largest energy companies in the United States are Exxon and Chevron, both being fossil fuel companies; they have a combined market value that exceeds the total of the next thirteen entries on the list, several of those also fossil fuel companies (Ariella, 2023). Furthermore, this monopolization creates a dependency. Smaller companies depend on larger companies, and in this case; companies that primarily turn a profit from their sales of renewable energy heavily rely on fossil fuel consumption to run the production process. Which is why a company like NextEra, one of the largest energy companies in the U.S., and a supplier of renewable energy, does not serve as a competition to the fossil fuel industry. It is rather a customer of it with 40+ million metric tons of CO2 emissions annually, due to a hefty portion of its production being powered by fossil fuels (NextEra Energy, 2021). Another way this monopolization occurs is through the co-opting of competitors by large companies either buying up their rivals or using their resources in order to quickly ascend towards a monopoly in an industry they have previously dealt very little with. The result of this practice is that renewable energy production, theoretically an opponent of the fossil fuel industry, more often than not is controlled by the same energy companies that extract fossil fuels.

Yet another way in which the monopolization presents itself is through indirect political influence. The direct political influence through lobbying has already been discussed, but the indirect political influence that comes with monopolization is just as vital. The monopoly that the fossil fuel industry has held for so long has made society's infrastructure largely dependent on fossil fuels, with roughly 80% of the world's energy stemming from such sources (Environmental and Energy Study Institute, 2021). When such significant portions of the energy supply, the labour market and the general economy is controlled by singular actors, as is the case with the largest fossil fuel companies, then the state has to take their interest into account. This could be through tax breaks, subsidies or regulations that benefit these companies. This indirect political influence is especially important because even in an ideal world where the fossil fuel industry were to deem lobbying as an immoral practice, and thus stop doing it, this influence would still continue. Their power incites this accommodation, whether they actively strive for it or not. It comes with the monopoly, and illustrates, perhaps more so than anything else, why the monopolization that modern capitalism has led to is a major issue.

It is the culmination of this monopoly, and the power it constitutes, that has made it possible for the fossil industry to remain under capitalism. In spite of 88% of EU citizens, for instance, being in favour of a green transition (European Commission, 2022). It might seem reasonable for such overwhelming support to yield results in democratic societies, but it is vital to note that these are *bourgeoisie democracies*. That is a term within socialist theory used to criticise the nature of democratic

institutions under capitalism by pointing out that the power within these institutions are primarily, or exclusively, available to the ruling class, and not the population as a whole (Lenin, 2000). It is perhaps this issue that Jamieson, unintentionally, points to when he deems democracies as incapable of dealing with the climate crisis (Jamieson, 2014: 100).

Dale Jamieson, as an ecological thinker, is not an outspoken critic of capitalism and he is certainly no Marxist, yet he has empirically illustrated Foster and Clark's point very well. For he has shown all the ways in which modern society is incapable of a green transition within its current system. He does not name this system as capitalism, and focuses more on policy-making than purely economic transactions, but that is nonetheless not distinct from capitalism. For it is capitalism, and the system of ownership therein, that has created a power structure with an invested interest in delaying, or entirely preventing, a green transition. Under capitalism people will attain a power that rests on their profit, a profit that again rests on a certain production, and this means that decisions on the climate will be made by people whose very influence on those decisions relies, partly or entirely, on the prevention of a green transition. Simply put, capitalism has given the fossil fuel industry power in the question of whether the fossil fuel industry should continue to exist or not, and in which capacity. In order to dismantle the fossil fuel industry, one must then look to dismantle also the system that is empowering it.

## Chapter 4: Eco-socialism:

This chapter will examine the final of the four economic systems explored in this paper: eco-socialism. Foster and Clark consider this the system capable of mending the metabolic rift caused by capitalism, and thus accomplish what green capitalism and promethean “socialism” cannot. This chapter will begin by explaining what eco-socialism is according to Foster and Clark. Then it will explore whether socialist principles can meet the requirements for sustainability found in Doughnut Economics (Raworth, 2017: 41-45).

### 4.1. A Brief History of Ecological Socialism:

The past century did little to associate socialism with ecology. The Soviet Union represented a form of “extreme productivity” that rendered the Stalinist mode of production, and extraction from nature, scarcely different from that of capitalism (Foster & Clark, 2020: 275). However, this form of “socialism” has been placed in brackets throughout this paper, for promethean “socialism”, akin to the one seen in the Soviet Union, lack the ecological concerns inherent to Marx and Engels’ writings, as well as subsequent socialist literature. Ecological socialism, or eco-socialism, is tautologically phrased, because socialism should be viewed as inherently ecological. For socialism is most accurately, and least controversially, described as the dismantling of capitalism; and if capitalism is an inherently unsustainable system, then the system consisting of its dismantling should be sustainable. For is the purpose of any successful revolution not to undo the harm, as best as possible, caused by the previous system? Even so, the sustainability of socialism cannot simply be taken for granted on account of what it *should* ideally be, because what matters most is whether or not the internal laws of socialism *actually* lead to sustainability. Thus, this will be explored, starting with a look at how eco-socialism came to be a term within Marxist thought.

Ecological concerns have been an oft-debated topic among Marxist thinkers, so much so that, according to Foster and Clark, eco-socialism must be divided into two stages. They point to a first and a second stage in the debate concerning eco-socialism, with a sharp distinction being introduced to the academic debates in the 1990’s (Foster & Clark, 2020: 190-191). The initial stage of eco-socialism developed in the middle of the 20<sup>th</sup> century, and it was primarily predicated on a criticism of Marx and Engels for not having been ecological enough. Two criticisms in particular were levied against Marx and Engels, and carried a lot of weight in the academic understanding of Marxism in the Western world in the 20<sup>th</sup> century. These were that Marx and Engels failed to consider natural limits to economic development and that they viewed nature as something to be dominated by humans (Foster & Clark, 2020: 190-191). The first charge stemmed from Ted Benton as he accused Marx of displaying a reluctance in acknowledging “nature-imposed limits” (Benton, 1989: 55). This was Benton’s response to a criticism Marx had written about Malthus. Thomas Robert Malthus observed the differing rates of growth for production and populations, with the arithmetic growth of production being unable to keep up with the exponential growth of the population (Malthus, 1798: 5). Thus, he

argued that populations eventually outgrow their resources, leading to famine, war and general social decay if the population growth is not limited (Malthus, 1798: 5). The theory appeared to many as a purely mathematical and empirical one, but it has one major shortcoming. Namely that it was predicated on assessments of capitalist societies, but attempted to apply the theory to all human societies. Thus, the cause for poverty, starvation and social suffering became population growth, instead of capitalism. Naturally, Marx did not agree with this.

Marx stated that Malthus was ahistorical in attempting to formulate a universal theory of population growth (Meek, 1952: 145). Malthus' theory did not take into account the historical contingency of resource-distribution under capitalism, or the effect capitalism had on population growth. As such Malthus shifted the blame for societal struggles away from the bourgeoisie. Benton, however, viewed Marx's criticisms of Malthus as having gone too far, and constituting criticisms of the very existence of natural limits to economic developments. However, Marx, as illustrated in the second chapter of this thesis, embraced Liebig's notion of a limit to the extraction that can be done from nature. Malthus and Liebig operate with different conceptions of a natural limit, as only Liebig's limit relates specifically to the capitalist mode of production, rather than general human reproduction as in the case of Malthus. Nonetheless, the charge of a lack of concern for natural limits stuck through the first stage of the eco-socialist debate. Thus, classical Marxism, according to first-stage eco-socialists like Benton, would scarcely be sustainable. For a system that does not recognise natural limitations to human production would struggle to meet the requirements of Raworth, which are based precisely on natural limits.

The second charge of a lacking ecological concern in classical Marxism came from Alfred Schmidt, a German philosopher belonging to the Frankfurt School, who accused Marx and Engels of wanting nature to be "mastered with gigantic technological aids" (Foster & Clark, 2020: 192). Foster and Clark view this likening of socialism's relation to nature with capitalism's relation to nature as "erroneous", and as a gross misreading of both Marx and Engels (Foster & Clark, 2020: 197). For instance, Marx and Engels pointed out that we cannot detach ourselves from nature and aim for "any dreamt-of independence from natural laws" (Marx & Engels, 2010: 105). To Foster and Clark it is held beyond any doubt that Marx and Engels were themselves concerned with a preservation of nature, and a maintaining of the social metabolism. That is because they can firmly be considered second-stage eco-socialists. These eco-socialists, gaining ground in the final decade of the 20<sup>th</sup> century, view Marxism as inherently ecological. It is primarily through the concept of the social metabolism between society and nature that these thinkers find Marx and Engels to themselves be eco-socialists to some extent.

Going further into the debate regarding the ecological merit of classical Marxism and socialism as such would not be useful for the concerns of this thesis. For I am primarily interested in understanding the concept of eco-socialism, not in determining whether Marx and Engels themselves would be considered proponents of it as such. The debate is nonetheless useful, because it highlights a couple of

vital aspects of sustainability that any conception of socialism would have to include to be a truly ecological project. Those are the recognition of natural limits and non-domination of nature. The former is the acknowledgement that human interactions with nature, through production, is limited by the finiteness of nature. The planetary boundaries that Raworth rests her work on are recognitions of such limitations within nature, and how they also go beyond the mere notion of using up a resource. The latter, that of non-domination of nature, is the acknowledgment that the natural limits cannot be circumvented if only one were to exert enough power over nature, to shape it to one's own will. It is not a matter of an ethical claim in this case, that nature ought not to be dominated by a singular species, but rather that it cannot be done. Thus, the two serves as sides of one and the same coin; nature imposed limits on economic activities, and any sustainable economic project must make no effort to ignore these limits by attempting to dominate nature.

It is important to not simply assume that socialism is compatible with these ecological attributes, for that would be a repetition of the same mistake that Hawken did with his concept of natural capitalism. For he listed a series of relatively uncontroversial measures that certainly would have mounted up to a more sustainable society, but all of those measures were incompatible with capitalism. It is not sufficient to say that eco-socialism is a form of socialism that respects nature and is sustainable. For that mirrors the definition of green capitalism; a system that was deemed to be not feasible. Therefore, eco-socialism must get a more specific series of attributes that can be tested against Raworth's requirements for sustainability. Furthermore, these attributes have to be compatible with the principles of socialism. If, as suggested earlier, socialism must inherently be ecological, then an examination of whether eco-socialism is possible is also an examination of whether socialism, in its true form, is possible.

Eco-socialism must fundamentally do one thing to live up to its name, and that is to mend the metabolic rift through an abolition of private property. The reason for singling out private property among the many facets of capitalism will be explicated later. The question here becomes how one can measure if a system can do this or not, and that is why eco-socialism will be reduced to a series of attributes similar to the ones used by Hawken in his effort to demonstrate capitalism as a potentially sustainable economic system. The most effective way to do this is to base the attributes on Raworth's Doughnut Economics, for any eco-socialist would have to agree to socialism being forced to operate within the bounds of sustainability. Thus, if, as has been done in this paper, Raworth's estimation of the bounds of sustainability are taken as authoritative, then a *successful* eco-socialist project is merely any economic system that (a) adheres to the necessary principles of socialism, (b) operates within the boundaries of sustainable economic activities and (c) is theoretically and practically possible to implement. This is what a conceivable eco-socialist project will be measured against. Firstly then, it is needed to define some concrete principles of socialism.

## 4.2. The Principles of Socialism:

Socialism is defined primarily by what it is not, for it is what Marx defined as a *negative utopia*. That is to say that it is predicated on the aspects of current society that it aims to abolish, rather than the new specific concepts it would introduce (Marx, 1959: 53). Negative utopias are easily attacked for merely offering a complaint about what is, instead of a proposal for what should be. However, as pointed out by Dan Swain in his defence of socialism as a negative utopia; if you see someone pouring gasoline on a cat it is not necessary to suggest a particular alternative act for those people to engage in, in order to say affirmatively that they should stop pouring gasoline on a cat (Swain, 2019: 108). The proverbial cat is here the planet, and the gasoline-pouring is the fossil-based capitalist system. It is, then, sufficient to recognise the system as fundamentally harmful in order to argue for the complete overturning of it. A precise alternative is not required, instead it is the very rejection of capitalism as such that becomes the starting point for the exploration of an alternative.

Even though eco-socialism is a negative utopia, it is not void of positive content that can be explicated. That is because *abolition*, in order to be a meaningful term, must not merely avoid including a particular concept, but wholly tear that concept up from the root. For instance, there is no shortage of economic models that are not based in private property in the way that it exists under capitalism. Feudalism is among them, but that does not mean that a reconstituting of feudalism in the 21<sup>st</sup> century would in any way represent an abolition of private property, because it is merely an adjustment on it, or rather private property under capitalism is an adjustment on the property relations that occurred under feudalism. An abolition of private property, which, as mentioned, Marx names as the defining characteristic of socialism, entails a restructuring of ownership from the private to the collective (Marx & Engels, 2005: 21). For that is diametrically opposed to private property. Thus, it is not a matter of shifting ownership from the bourgeoisie to nobles like under Feudalism or to the state, at least not the states as they currently exist, but to the people. That is a non-negotiable principle of socialism, just as the profit incentive or the growth imperative are to capitalism. That which is open to variation is the manner in which it is ensured that this ownership is collective and shared. Anarcho-communists would suggest this is best done in the absence of as many hierarchies and institutions as possible, even claiming that “State Communism is impossible” (Kropotkin, 2009: 8). Whereas others argue it is necessary for socialism to maintain a state-like system, and then the state will eventually “wither away” when it is no longer needed (Lenin, 1993: 14). Said state would be fundamentally different from the capitalist state, which acts more like a particular kind of corporation with its own economic interests, rather than a pure centre of regulation and distribution as one might imagine a state to operate as under socialism.

The first principle of socialism is then collective ownership. It is worth noting that this collective ownership is an abolition of *private* property, not of *personal* property. Which is to say that a person can still own the clothes they wear and the house they live in. What they cannot do is to rent out their



house to derive a profit or take ownership of things in such a way as to create a scarcity, for instance by taking ownership of the water in a river. Thus, it is not necessary to add a principle of equal or just distribution of resources, for it is already implied in the system of collective ownership. A person cannot own a warehouse full of food while another person starves under a system of collective ownership. Thus, it is not necessary to add the second part of the famous adage of “From each according to his ability, to each according to his needs” to our list of socialist principles (Marx, 2021: 16). However, the first part of that slogan can serve as the starting point for a second principle of socialism.

Another aspect of capitalism, that socialism is the abolition of, is wage slavery. To abolish wage slavery is precisely to ensure that nothing is required of a worker beyond their abilities. Under capitalism a worker is expected to produce enough to survive, for wages are the only means of livelihood (Marx & Engels, 1970: 53). The precise amount of production required depends on arbitrary factors such as the fluctuations in the market and the goodwill, or lack thereof, of the capitalist paying their wages. The precise definition of someone’s abilities to contribute to production in society could be subject to discussion. Ranging from a strict requirement of acting in accordance with one’s absolute physical abilities to a softer rendition of acting in accordance with a level of contribution that is in accordance with one’s ability to simultaneously enjoy one’s life. The latter is a hedonist approach, which is to say the claim that it is pleasure or enjoyment that is the principle worth that matters (Moore, 2019). Marxism, however, is not predicated on hedonism, so it is not reasonable to use that interpretation. Whereas the former interpretation would ignore the very reasoning for the principle to begin with, namely that it should allow for the flourishing of our human capabilities. The “capabilities existing in a human being” are expressed in production of something of use value, but the commodification of capitalism suppresses this expression (Marx, 1887: 119). That is how the second principle can be formulated; a society in which people are given the ability to realise themselves as human beings. Something that, to any Marxist, is undoubtedly not accomplished in a capitalist society as workers there suffer a “cattle-like existence” (Marx, 1959: 3). Thus, the abolition of that system must accomplish this.

It still remains to determine what is meant by realising oneself as a human being. Different conceptions of what is truly human behaviour could lead to very different conclusions regarding the possibility for a system guided by this principle to be sustainable or not. There is a vast difference between viewing humans as beings that realise themselves by living in harmony with nature and beings that realise themselves through a domination of nature. Marx define human nature as inherently social and productive, and it is through these capabilities that we realise ourselves; through creation and “spontaneous, free activity” (Marx, 1959: 32) Thus, the ability to labour freely, rather than at the command of a capitalist, is a vital part of socialism. This form of labour is less bound than the labour we know from capitalism, so a person could do carpentry in the morning, fishing in the afternoon and

writing in the evening, without having committed themselves to doing the same forms of labour the next day (Marx & Engels, 1970: 53). The main question concerning this free expression of labour relates to which restrictions can be put on human production and still be within the bounds of socialism. Ecological concerns necessitate some limitations to this, at least theoretically speaking, as it is not sustainable for every person to fish every day, eventually there would be no more fishes. Socialism has no growth imperative like capitalism, so this over-extraction and overproduction is practically speaking unlikely to occur by itself, but it does nonetheless need to be possible to actively limit excessive human production in order to deem eco-socialism possible. The issue of imposing natural limits under socialism will be discussed later on.

A list of socialist principles can vary a lot in length, for it depends on what one categorises as a principle in itself and what is merely viewed as an extension of another principle. Social ownership of the means of production, that is to say the abolition of private property, could very well be used as the one and only principle of socialism. After all, Marx and Engels deem it “identical with [communist revolution]” (Marx & Engels, 1970: 55). However, for the sake of clarity I will nonetheless explicate a few other principles. Not because they do not derive from the initial principle, but because they are relevant to an analysis of ecological measures under socialism and so it is more practical to have them explicitly laid out.

In that vein, two additional principles of socialism will be briefly formulated: Socialism abolishes the process of incessant commodification, and it does this through a shift back from viewing something in light of its exchange value to focusing on its use-value (Foster & Clark, 2020: 220). Secondly, socialism is the abolition of the *alienation* of human nature. Under capitalism humans are alienated from ourselves, each other and the natural world (Marx, 1959: 31-32). We are made into an object of capital, a commodity in ourselves (Marx, 1959: 3). The abolition of this alienation, which occurs with the abolition of wage slavery, which in turn occurs with the abolition of private property, is seen in the return of humanity’s ability to exist for ourselves. To labour for ourselves, instead of for wages. Humans are, under socialism, ourselves the aim of our existence; a person is a being for themselves. This is in opposition to capitalism where life is reduced to merely “a means to life” as we use our human capabilities not to express our humanness, but rather to simply survive (Marx, 1959: 31). The extension of all this is the intrinsic worth of a human being. It is not a moral decree prohibiting any and all harm to human beings, after all the revolution on the way to socialism is scarcely imagined to occur without injury. It is rather a principle preventing the systematic treatment of persons as beings primarily for other persons. This is because socialism is not a moral theory, but rather a political system. Therefore, it is not here a primary concern what individuals in a socialist society might do to one another. Rather the focus is to not allow for a systematic dehumanisation that infringes upon the human worth, such as the commodification of people, and the wage enslavement of the proletariat, under capitalism are examples of.

In summary, the principles that the ecological efforts must be in accordance with for eco-socialism to be a possible project include collective ownership, the realisation of human capabilities, a preservation of use value and an absence of systematic dehumanisation. This list could be much longer and also shorter, making the definition of socialism more and less strict respectively. Only the first principle can be given no leniency, but for the sake of clarity I have elected to describe a few principles that are typically derived from the initial principle of abolishing private property. All these principles can, as mentioned, be realised in a plethora of different ways in a socialist system. The precise ways in which they are realised is not important, but rather that they constitute complete abolitions of the system that a revolution overthrows. The examination of eco-socialism to follow will focus on eco-socialism as a global project. It is a matter of analysing an alternative to the global capitalist economy, and thus the replacement must also be global. Furthermore, socialism has throughout history been intended as a global project, even if the practical political attempts at it have yet to ever become truly global (Marx & Engels, 2005: 56). One might surmise that precisely this is one of the causes for the outcomes of the socialist projects that the world has seen thus far.

### **4.3. The Path to Sustainability:**

A reason to be immediately optimistic on behalf of the eco-socialist project is that both sustainability and eco-socialism could conceivably be summed up in the same exact sentence: the effort to mend the metabolic rift in the social metabolism between society and nature. This is what both Raworth's Doughnut Economics and the eco-socialism of Foster and Clark aim to accomplish. However, the two cannot be deemed compatible merely by virtue of having the same goal. For what matters are the measures required to reach that goal. That is what will be discussed in this section.

None of the suggested changes by Hawken were criticised in the previous chapter for a lack of sustainability, but rather for a lack of compatibility with a capitalist system. Thus, it is a practical starting point to look at the changes that Hawken wished to implement, and then view those changes in light of the limits discussed by Raworth to see if they are sufficient to create a sustainable society. The proposals made by Hawken can be reformulated in a generalised way as such (Hawken, 1999: 10-11):

1. Increased efficiency to be able to maintain high productivity with fewer resources needed.
2. Waste reduction through increased reusability.
3. A shift from quantity-based to quality-based production.
4. Increased investment in the protection and restoration of nature.

These four efforts, if successfully implemented, would go a long way in mending a sizeable portion of the metabolic rift. The first three implementations all concern the same issue, namely excessive extraction from nature. They can all be viewed as three separate measures, conceivably all of them required, to reduce the current demolition of nature in the name of increased production output. In

other words, all three measures would, theoretically, reduce the extraction from nature. Increasing the efficiency of technologies, implementing imperatives of reusing materials and measuring the worth of products on their quality rather than quantity, are all efforts that together would reduce this extraction. The shift to quality over quantity would, hypothetically, reduce the amount of products that the total process of production would aim to create. Whereas an increased technological efficiency would lead to the already-reduced amount of products to be made with less of an imprint on nature. Waste reduction through recycling would reduce this total even further. These measures would, therefore, if taken far enough, ensure that the society carrying them out stays within some of the limits lined out by Raworth. It could reasonably prevent, either completely or to a certain extent, continued biodiversity loss, freshwater withdrawals and land conversion. However, even if one were to graciously assume that these three measures laid out by Hawken would solve these problems, there still remains six more limits for Raworth that must not be crossed (Raworth, 2017: 41-45).

The remaining ecological limits, however, all relate, in one way or another, to the existence and continuation of certain human practices that poison the environment. They are not directly a matter of excessive extraction, but rather practices that incidentally have a harmful effect on the planet. Such as use of gases that deplete the ozone layer as opposed to a direct extraction of the ozone layer itself so as to use it as a resource in our production. The same can be said, either completely or partially, about ocean acidification, chemical pollution, nitrogen and phosphorus loading, air pollution and, perhaps most dramatically, climate change. Thus, a sustainable society must have an economic system that is able to regulate these practices as needed, including a potential phasing out of them in their entirety. This is what capitalism cannot do, as ecological concerns cannot override the search for profit, not without violating the private property relations that uphold the capitalist system as precisely a capitalist system.

However, it is precisely this that Hawken attempts to achieve by “expanding [the] stock of natural capital” as a form of capital to be prioritised, when necessary, over financial capital (Hawken, 1999: 11). Thus, this proposed change will also be kept, and tested against socialism. For the sake of clarity it will be reformulated as the protection of nature when necessary to stay within the limits put down by Raworth. The specifics of natural capital for Hawken is therefore not that vital, as the focus is on that which is aimed at with it, namely, to protect nature from these harmful practices. Given the severe crisis that the fossil fuel industry, in particular, is leading to, in the form of the climate crisis, added attention will be given to the ability of socialism to phase out this industry. From all this there can be devised two main criteria for sustainability predicated on a symbiosis of Hawken and Raworth.

1. A significant reduction in the extraction from nature. This is conceivably achieved through a combination of (a) increased efficiency and (b) reusability in production, along with (c) a principle of making fewer total products due to a shift to valuing quality over quantity.

2. Protecting the environment through regulating, and if necessary dismantling, harmful practices. With a particular focus on the phasing out of the fossil fuel industry.

These two criteria make up the second part of the previously outlined definition for a successful eco-socialist project: any economic system that (a) adheres to the necessary principles of socialism, (b) operates within the boundaries of sustainable economic activities and (c) is theoretically and practically possible to implement. Since both a and b have been described, it is now a matter of moving on to c by determining if it is a theoretically and practically possible project. Starting with a theoretical analysis akin to the one conducted for natural capitalism in the previous chapter.

#### **4.4. Reducing the Extraction From Nature:**

The first sustainable measure to be tested against the principles of socialism is a radical reduction of extraction from nature, and it will be done through looking at the three ways Hawken intended to accomplish this under capitalism. Decreasing the input in the production process on account of increased technological efficiency is quite unproblematic under socialism. The problem with increased efficiency under capitalism was that it triggers the Jevons Paradox as Foster and Clark demonstrated. The growth imperative of capitalism led to an increase in total production output, rather than a decrease in resource expenditure (Foster & Clark, 2020: 245-246). This paradox does not apply to socialism, because there is no imperative of growth, expansion or maximised extraction. Promethean “socialist” projects might include such imperatives, and this could create the false impression that socialism as such is predicated on a similar growth imperative as capitalism. The absence of a strict imperative centred around growth or maximised extraction of resources does not automatically mean that increased technological efficiency would lead to fewer resources extracted from nature. It merely means that there is then room for implementing an ecological imperative to ensure that the increased efficiency is utilised to yield a reduction in input rather than an increase in output. Eco-socialism, unlike green capitalism, does not have any internal contradictions between such an ecological imperative and its other imperatives.

Since it is unlikely that relying purely on technological advances will reduce the extraction of nature sufficiently to mend the metabolic rift, it is necessary to also analyse the two other measures mentioned earlier. An imperative of reusing materials, instead of, rather than in addition to, using new materials is equally unproblematic under socialism. The reusing of materials and products is simply a benefit to a socialist project, because it means that even waste can be valuable. Socialism deems something as valuable based on its use value, that is to say the utility that a certain object has, so naturally the ability to reuse something is an inherent positive. This differs from capitalism, which with its imperative of exchange value only sees the reusability of something as valuable if it does not diminish the exchange value of the products already present in the market. Furthermore, use value has a natural ceiling that would cause an increase in recycling to lead to a decrease in new production of the same products. Something is only useful if someone can in fact use it, and so socialism would not

want to produce in excess, for the value would be lost if more examples of a product exist than the amount that can be reasonably used. This is also the case for capitalism, as too much of something in the market diminishes its exchange value. Yet, they differ greatly in the approach to this issue, and it comes down to the difference in ownership. Private ownership leads to, by necessity, an unplanned economy as all individual companies produce based on their own individual plans. Thus, a series of producers will independently produce examples of a product in the belief that it will lead to maximised profit. Upon too many producers doing this, the market will be flooded and the exchange value will be diminished, and this, as mentioned in the previous chapter, demotivates reusability as that simply leads to the longevity of products in the market capable of flooding it. The capitalist solution is waste; to destroy the superfluous products and restore the exchange value of the products remaining in the market (Foster & Clark, 2020: 252).

Socialism, on the other hand, has, by virtue of its collective ownership, the possibility for a planned economy. Simply put, an estimate could be made of how many examples of a certain product is needed in society, and then producers will be asked to produce no more than that which is needed. Higher reusability would simply lead to a lower amount of new products being requested of the producers, and then the extraction needed from nature would also decrease. The particular institution or institutions making these requests could vary based on the exact model of eco-socialism one were to implement. The point is simply that socialism, unlike capitalism, has the opportunity to plan production, both locally and globally, to avoid unnecessary excess. Private ownership makes it so that no conceivable institution can plan production and restrict it for ecological purposes, whereas collective ownership makes such planning a possible, and perhaps even natural, feature of socialism.

This planning of the economy also touches on the final measure to reduce extraction from nature, as limiting the amount of products to be produced is in itself a shift away from the quantity-based value of the modern economy. The shift to a quality-based value system is also unproblematic under socialism, although it could easily appear to be problematic. For socialism already has, as one of its described principles, a particular value system. Is use value compatible with qualitative value in an ecological sense? For the first-stage eco-socialists the answer likely would have been no, as they view socialism as inherently unsustainable. However, Foster and Clark are second-stage eco-socialists, and it is their eco-socialism that is being used as the basis for this evaluation. The sustainability of use value, and how it accomplishes the exact same that Hawken wishes to accomplish with his qualitative value, is perhaps best seen in the Lauderdale Paradox. While that paradox was presented in the second chapter to illustrate how exchange value functions, it also illustrates use value. For use value is merely conceived as the natural state of things prior to the commodification that comes with private property. It is how we immediately, as human beings, interact with the world around us. Whereas other humans have a value in themselves, as they exist for themselves, inanimate objects, be they wholly natural or laboured upon, appear to us as either useful or not useful. The more useful something is to us, the

more valuable it is. This is not as much an imposed imperative as it is a description of the Marxist understanding of how humans relate to inanimate objects. It explains why objects that we deem as having no value to themselves are nonetheless deemed to have value for us. Thus, the water source described in the Lauderdale Paradox is valued as a source of water, and by keeping it as collective, rather than private, property it maintains its value and society avoids becoming poorer.

The question becomes, what happens to those parts of nature that are not useful to us before having been extracted and laboured upon? Seemingly, use value is unsustainable and allows for an excessive extraction akin to capitalism, merely done for the sake of maximising utility rather than profit. However, that is only the case if one were to narrowly define utility as something that is immediately felt. A more holistic interpretation of utility would deem trees as not only useful when chopped down and turned into fire wood and tables, but also when left alone as they serve their purpose in the ecosystem. Furthermore, the use value of Marxism could be viewed through the lens of *affordance* as presented in ecological psychology. It is a view upon which an environment has a certain value to the organisms in it based on what they offer, and nature, purely by being our surroundings, can have its value “directly perceived” (Gibson, 1979: 127). The point at hand is not to equate Marxism to ecological psychology, but rather to illustrate that on the topic of use value there is no incommensurability between the two.

Under capitalism everything is a part of the same value system that deems everything either a commodity or a worthless. Even human beings are only valuable, under capitalism, as commodities ourselves, as workers whose labour can be bought cheaply by the capitalists. Socialism, on the other hand, has room to operate with concepts of value outside of the traditional economic sphere. In other words, socialism does not make everything into products to make them valuable, for value already exists in nature. Where capitalism only sees resources yet to be extracted from nature, socialism sees nature. This nature does not have to be deemed as valuable in itself to be protected, and that is due to the importance of the social metabolism under socialism. Maintaining a balance in the social metabolism might be done for the sake of humanity more so than for the sake of nature, but nature benefits all the same. None of this is to say that eco-socialism cannot operate with any concept of nature as inherently valuable separate from humans, but rather that such an imperative is not needed for eco-socialism to be sustainable.

#### **4.5. Dismantling the Fossil Fuel Industry:**

The final measure to ensure that the eco-socialist project does not cross any of the nine ecological ceilings presented by Raworth is the regulation and dismantling of harmful industries. As discussed in the previous chapter, this is not inherently impossible under capitalism, but highly unlikely to happen by itself. Furthermore, external pressure to dismantle these industries is particularly difficult due to the power certain industries and companies have accumulated. Socialism does not encounter either of these issues. Firstly, a socialist society would not have to hope for harmful practices to no longer be

profitable, as the profit motive is not present in any way. The second issue is not relevant either, because socialism is the abolition of the very power structures that kept those industries going. There is no powerful class benefitting from certain industries, and thus determining to maintain them in spite of their negative impact on a lower class. The egalitarian aspect of socialism ensures that dismantling these industries becomes significantly easier, because the maintenance or dismantling of any industry no longer amounts to class warfare, for the socialist revolution is the victory of the proletariat in that war; it is already over. However, this merely means that dismantling these industries is possible under socialism, not that it is entirely unproblematic.

As an example, I will once again look at the fossil fuel industry. Socialism is immediately capable of getting further in the process of phasing out fossil fuels than capitalism, as there is no monopoly to overcome. However, this means that the eco-socialist project would be left with the challenging task of phasing out an industry that has been integral to human infrastructure for centuries. Doughnut Economics, as mentioned, does not only have a ceiling, but also a floor. The social foundation of any society deemed sufficient by Raworth must include access to basic needs, and energy is one of these needs (Raworth, 2017: 49). Furthermore, socialism is already predicated on an effort to secure this social foundation, and so it becomes clear that the phasing out of the fossil industry becomes not a challenge against a particular industry, but rather against a particular resource that benefits society in certain ways. The question for eco-socialism would not be whether the fossil fuel industry is worth keeping or not, but rather how it can most justly be phased out.

One of the primary arguments often levied against a phasing out of the fossil fuel industry is that it would mean shutting down workplaces. While it may not be a sufficient argument to justify a continuance of such a harmful industry, it is certainly an argument that carries some weight. That is reasonable in a capitalist system as the consequences of losing a job can be dire, and in the worst instance they can represent a loss of the social foundation required by Raworth. However, eco-socialism is capable of shutting down fossil fuel installations without the same consequences. That is due to the abolition of wage slavery that comes with any socialist project. Whereas alternative work might still be desired by the workers who are left without an immediate job due to the shutting down of their workplace, it would no longer pose a threat to their material wellbeing. The link between work and sustenance, through wages, no longer exists under socialism; material needs are met merely on account of being needed, with no qualifications required (Marx, 2021: 16). Access to food is secured not by virtue of one's own work, but by the virtue of the accumulative work of society.

However, there still remains the issue of the beneficial role that fossil fuels have in society. Despite doing more harm than good, they still do a significant amount of good. The situation we are currently in with the climate and ecological crises, as shown in the first chapter, is so severe that it might be naïve to hope that these changes can be implemented without harm. The slower the fossil fuel industry



is phased out the easier it is to find replacements for its beneficial role, but the time for a slow transition has perhaps already passed us by. We might have to “abandon the Promethean dream of a certain, decisive solution” and instead accept that we will have to navigate a “messy world” (Jamieson, 2014: 10). The path forward, also under eco-socialism, would be marked by harm reduction, rather than a complete avoidance of any harm. However, eco-socialism might just be the system best equipped to also reduce this harm. For unlike capitalism, the issue of artificial scarcity does not exist. This artificial scarcity comes into existence through the imposition of privatisation of resources, as seen in the Lauderdale Paradox; an increase in private wealth is a decrease in “public wealth” by denying common access to something that was previously enjoyed by everyone (Foster & Clark, 2020: 154). Thus, socialism will be more favourably positioned to minimise scarcity following a phasing out of the fossil fuel industry. This is not to say that no material scarcity will occur, as the simultaneous issues of the climate crisis and a need to quickly transition away from predominant industries is likely to bring about scarcity. The Marxist dream of socialism bringing about a so-called superabundance of resources might be dead, for it could not have accounted for decades of environmental degradation under capitalism before a transition to socialism (Marx, 2021: 16). Thus, some difficult decisions must be made, but under eco-socialism these decisions would be made with the common good in mind, as opposed to the good of one societal class against another.

Socialism inspires for equality where capitalism incites inequality, and as such scarcity would look different under socialism. Scarcity in our current society is characterised by great inequality. Some people enjoy abundance whilst others suffer shortage. This is not only true within societies, but also across them, as entire continents have had their resources depleted to feed into other continents. This, as seen in the second chapter, is an inherent part of the strategy of expansion under capitalism, to colonise other regions and take their resources from them. It has created a situation in the world that has led to a particular argument against the phasing out of the fossil industry; namely that there are several countries and even continents that are in dire need of the benefits of fossil fuels (World Economic Forum, 2021). That is undoubtedly the case for many societies around the world, and it is a practical starting point for illustrating the distribution process under global socialism. For the planning of an economy does not only allow for the slowing down of production, it also provides an opportunity to distribute the products in the most beneficial way possible. Under capitalism it is the individual capitalist, the owner of the means of production, who determines how the products, or their equivalent sum of money, are distributed. Naturally, this leads to the greatest possible “concentration of ... wealth in the hands of individual capitalists” (Marx, 1887: 438). An eco-socialist project would allocate a far greater portion of the fossil fuels, produced prior to a complete dismantling of the industry, to Africa, Asia and South America than it would to Europe and North America. Simply due to the need being greater in those regions, and resources under socialism are, as known, distributed according to need (Marx, 2021: 16).

#### **4.5.1. Minimalism:**

Unsurprisingly, socialism is a system designed to cater to the needs of those who suffer the most scarcity, and one could argue that this is a sufficient reason to prefer such a system. However, one might be worried that eco-socialism would be a minimalist society wherein everyone would barely have enough to get by, and nothing more. While eco-socialism cannot do anything with the harsh climate it is forced to operate under, it does not impose a minimalism to a more extreme extent than necessary. That is to say that it would not automatically dismantle every single industry that is not strictly speaking necessary. Nonetheless, *degrowth* has to be a part of any sustainable system, and socialism, unlike capitalism, does not have internal imperatives hindering such a degrowth. Degrowth is the slowing down of the pace of production, and the valuing of traditionally non-productive activities like “leisure and play” as equal to work (Foster & Clark, 2020: 186-187). This can appear quite different from the Marxist focus on labour as the expression of human capabilities, but they are, in fact, equal in this respect. Labour under socialism as a “spontaneous, free activity” makes it indistinguishable from leisure and play (Marx, 1959: 32). In other words, degrowth, not merely the agnostic attitude to growth required by Raworth, comes naturally to a socialist system.

Some of the scaling down of industries could be viewed as particularly unproblematic under eco-socialism, because the perspective is on the common good. Thus, reducing, or even removing, an offer that only ever existed for the bourgeoisie to begin with, would not be a problematic measure. For instance, the banning of private airplanes would be a simple measure under eco-socialism. A more interesting case, however, might be the commercial airline industry as such.

Transportation has followed a trajectory of becoming faster and faster, so it is now taken as a given that we should be able to travel great distances in a short time, whether by train, planes or automobiles. However, airplanes in particular have only existed for a brief portion of human history. Furthermore, it has been accessible only to a minority of the population, yet the notion of eliminating the commercial airline industry seems farfetched to those who have become accustomed to it. Commercial aviation is responsible for roughly one billion metric tons of CO<sub>2</sub>, or roughly 2,5% of global annual emissions (Ritchie, 2020). Yet it is used by only 6% of the world’s population in a single year (Negroni, 2016). In other words, nearly one billion metric tons of CO<sub>2</sub> are emitted into the atmosphere every year from an industry that more than 99% of humans throughout history have lived without. Yet, we tend to view it as an essential staple of society as we know it. A practice that is widespread within the bourgeoisie, and among the richer members of the proletariat, is held as far more essential under capitalism than under socialism. There are many services that are harmful to the environment, and that have only been accessible to rich people under capitalism, so it is perhaps time to take them off our lists of essentials for a dignified life.

Socialism, then, is not only capable of prioritising ecological concerns where capitalism is not, but also internally motivated to do so by virtue of its principles. The fundamental understanding of being

human, and the role of society in realising our potential, as well as to justly govern the metabolism with nature, implores a socialist project to also be an ecological project. If anything, eco-socialism would criticize both Hawken and Raworth for not operating with strict enough requirements for sustainability. Avoiding crossing certain limits is not enough, a complete transformation of the human relationship with nature has to occur. A revolution no less. Not only in bringing about the system, but in the system itself, in the metabolism between human society and nature.

#### **4.6. The Eco-socialist Revolution:**

To end the chapter I will briefly discuss the practical possibility of eco-socialism. For while it has been shown that socialism is very much compatible with sustainability it would be rendered meaningless if the system cannot be practically brought about through a revolution. The remainder of this thesis will explore precisely that topic: revolution.

As described earlier, socialism is a negative utopia defined by that which it is not, that which it overthrows. To outline any exact institutions that would make up an eco-socialist society is not only difficult, but pointless. For as the complete abolition of the existing system, it is a society created through resistance; through the revolution itself. The revolution creates the revolutionaries capable of creating the revolutionary society (Swain, 2019: 105). Thus, the particularities of an eco-socialist society cannot be designed now, for the revolution has not happened yet. However, what can be explored is the character of this uprising by explicating what it is an uprising *against*. Socialism is the abolition of capitalism, but eco-socialism must be more exact than that. The system that eco-socialism is the abolition of is perhaps most practically described as fossil capitalism, for it is vital that both the *fossil* industry and the *capitalist* economy are dismantled. Fossil capitalism is not only a capitalist system wherein the fossil industry exists, but a capitalist system wherein the fossil industry has accumulated enough capital and power to practically hold a monopoly. Rendering it capable of influencing media coverage, research and policies in order to sustain itself. The intertwining of capitalism and the fossil industry is such that a resistance against one can, and most definitely ought to, be a resistance against the other. Resistance to fossil capitalism *is* the eco-socialist revolution.

Therefore, it is what the environmental movement, if it is to be a meaningful movement aiming at bringing about a sustainable society, must be. It must be a resistance against fossil capitalism. Not just the fossil fuel industry, and not just capitalism in its current form, but the totality of both, along with other poisonous industries. Only this way can it be a movement towards mending the metabolic rift. It is precisely the resistance carried out by this movement that will be explored in the final chapter. To examine at which cost the movement towards eco-socialism, through the resistance against fossil capitalism, can be ethically carried out.

## Chapter 5: The Resistance Against Fossil Capitalism:

In this final chapter I will explore three different approaches to resistance against fossil capitalism; pacifism, non-pacifism and anti-pacifism. This will be done through a reconstruction of Andreas Malm's book *How to Blow Up a Pipeline: Learning to Fight in a World on Fire* (2021), with a focus on his presentation of the pacifism that has characterised the climate movement so far and his alternative in the form of a strategic non-pacifism. Malm leaves open the possibility for tactics beyond the ones he primarily promotes, and this will lead into an exploration of the final alternative: anti-pacifism. Frantz Fanon, in his work *The Wretched of the Earth* (1963), presents an outlook on violent resistance as not only effective, but also moral. The deliberations around these three forms of resistance will be examined against the particular struggle against fossil capitalism to investigate the character the climate movement could reasonably take as an eco-socialist movement.

The three different approaches will be viewed in light of where they could operate on a conceived scale of radicality. Four general categories of methods available to social movements will, for the sake of this purpose, be formulated as such:

1. Legal protests: Such as demonstrations, social media activism, political engagement and petitions.
2. Extrajudicial, non-violent disruptions: Such as sit-ins, blockades, interruptions of public events, tagging and other acts that disrupt the peace without causing lasting damage.
3. Sabotage: Extensive property damage. It can range from the smashing of a single window to the bombing of a building. It can occur either as an organised sabotage campaign or as a part of a disorganised riot.
4. Armed struggle: Violent resistance in the form of militant revolts, guerilla warfare or other acts of resistance through an organised militia.

The transition between these four categories can be fluid, and disagreement might arise about when light vandalism turns to sabotage or when sabotage turns violent enough to be a form of armed struggle. Nonetheless, these generalised distinctions give a practical framework for setting moral limitations to social movements.

### 5.1. Moral Pacifism:

Pacifism is predicated on the moral superiority of non-violence to violence, and, vitally, its extension to the impermissibility of violence (Narveson, 1965: 259). There is an inherent absolutism to moral pacifism, and so violence is never permitted under any circumstances (Malm, 2021: 30). However, the definition of *violence* can vary, and it is the content of this definition that might separate one form of moral pacifism from another. Whether violence is characterised as any physical force exerted on someone against their will or as a particular form of *unjustified* exertion of said physical force, will completely alter the theory.

The environmental movement has followed a pacifist line (Malm, 2021: 22). The influence of pacifist thinking on the climate movement is such that Malm describes it as “hegemonic” (Malm, 2021: 38). He does not describe a mild preference for non-violent actions within the climate movement, but rather a strict adherence to pacifism as an absolutist principle. One that even extends to property (Malm, 2021: 23). An illustration of the position pacifism has in the climate movement is shown in a climate action in the Netherlands in 2018 wherein Malm describes 700 activists responding to pepper spray and batons from the police without a single stone being thrown in response (Malm, 2021: 22). Responding to police brutality, consisting of batons, pepper spray, tear gas, fire hoses and rubber bullets, with improvised “weaponry” like rocks or canisters is far from unheard of. Malm pointed to this example from 2018 precisely because it illustrates a situation where many other movements likely would have acted differently. A coordinated reaction from the 700 activists would have been unlikely, but it is also not the absence of this that Malm focuses on, but rather the fact that not a single person among 700 decided to react that way. It is, to Malm, an example of just how impervious the pacifist line within the climate movement is; it constitutes an “internalisation” of the pacifist principle within the movement (Malm, 2021: 22). This is the first form of pacifism to be explored; a pacifism with a strict understanding of violence.

Climate activism, of which the 2018 action is but one of many examples, has taken on the character of a *civil disobedience*. However, there is “no single... idea of civil disobedience”, and as such the particular form of the one meant here has to be formulated (Scheuerman, 2018: 5). The concept, in its most essential form, constitutes the moral right to break certain laws. The laws that might be broken, and the reason for breaking them, varies across different conceptions of civil disobedience. Laws might, for instance, be regarded as “so disrespectful of basic dignity” that violating them is a moral duty (Scheuerman, 2018: 162). While the precise justification for breaking a law varies, it cannot be for “narrow private gain” that it is done (Scheuerman, 2018: 44). The kind of civil disobedience that has characterised the climate movement is one in which there is a right to break unjust laws, as well as a permissibility to break other laws. For if a law (x) is deemed unjust then also breaking another law (y) might be implored, even if the latter law is not deemed unjust in itself. This is why an argument from civil disobedience can justify not only the targeted actions against the fossil industry, but also actions that have characterised certain sections of the climate movement over the past years; such as roadblocks, paint-spraying and the disruption of public events (Moench, 2023). The law saying that you cannot sit still on a highway is not in itself an immoral law. It is a highly reasonable law that anyone, including the ones actively breaking that law, would want to have in a society. Yet, they break this law as a means to an end. The law, being in itself understood as not innately morally binding, can therefore be used as a means. Whether it is through pressuring the government or garnering public attention, breaking seemingly arbitrary laws to accomplish a goal is morally no different from protesting within the bounds of the law. Civil disobedience, then, erases the moral distinction between

the social movements operating within the first category, legal protests, and those operating on an extrajudicial basis.

The moral right to break the law is not sufficient to describe civil disobedience, for it also extends to a *duty* to break unjust laws in its most active form: “coercive civil disobedience” (Gans, 1992: 140). This form of civil disobedience is the most relevant for the topic at hand, for it is concerned with activism. A form of civil disobedience that falls outside of this, due to its passivity, would for instance be “conscientious objection”, or the decision to withstand from performing an act one is legally obliged to do on the basis of moral concerns (Gans, 1992: 140) This distinction is vital, for the former implores resistance to take the form of an active violation of the law, rather than merely a passive refusal to partake in certain obliged activities. The conscientious objector could, before the abolition of slavery, refuse to report an escaped slave to the authorities, but a person acting out of coercive civil disobedience would have actively served as an aide in the escape. Harriet Tubman, as the leader of the Underground Railroad for eight years, acted out of a moral duty when freeing enslaved people against the law (Larson, 2004: 276). Thus, it is clear that civil disobedience would justify, and even morally obligate, extensive law-breaks, but where precisely does the limit go for the kind of resistance a civil disobedience argument could morally justify?

The climate movement has been predicated on an understanding of civil disobedience that emphasises the term *civil* and extends to it a principle of civility in the form of strict non-violence. When understood in this sense, no exceptions to the pacifist principle are allowed (Malm, 2021: 32). However, this absolutism leads to a series of problems. An example of a situation where one might want to permit violence, on a strict definition, is the prevention of a massacre, such as by Mohammed Rafiq, who ferociously attacked and unarmed a white nationalist in Norway in 2019 (Malm, 2021: 31). The would-be-mass-shooter was left visibly bruised by the actions of Rafiq, yet this action is one that is unlikely to be deemed as anything short of heroic. An understanding of violence that would implore Rafiq to allow a massacre to ensue, on account of a conceived moral notion of rather “subject[ing] oneself to suffering one doesn’t deserve” than committing any harm to anyone, is an overly simplistic one (Malm, 2021: 33) It is necessary to expand the concept of violence and allow for certain exceptions to the imperative of not enacting physical harm, in order to avoid reducing moral pacifism to a strawman of itself, that is refuted at the mere mention of a single valid case of enacting physical harm.

#### **5.1.1. Self-defence:**

Rafiq acted in an effort to defend himself and others, and as such prevented far more violence than if he had subjected himself to a strict passivity. The right to self-defence, then, ought to be supplemented to pacifism. Not as an exception to pacifist behaviour, but rather as an extension of non-violence. For self-defence would not, upon a less restrictive understanding of violence, be an enactment of non-pacifism at all. For instance, Dr. Martin Luther King Jr., the very symbol of pacifist resistance, had a

series of guns in his house, and explained that they were “just for self-defence” (Malm, 2021: 47). This could be permissible as a part of pacifism, not because he never used the weapons, but because he never used them in *aggression*. This is to say that it is compatible with pacifism to bear arms, and to use them when a threat arises to defend oneself, but not to use them in such a way as to become an aggressor. The march from Selma to Montgomery would have remained pacifist, regardless of how many of the participants were to have carried arms. However, had they marched into Montgomery specifically using those arms to dispatch of opponents, then it would have strayed far from the principle of pacifism. The defensive character, then, is vital to its permissibility within pacifism. Furthermore, this defence cannot be pre-emptive, which is to say it cannot dispatch, by means of force, a threat that has yet to materialise. For if it could, then the very existence of other people’s ability to harm you would be just cause for attacking them. Their limbs would be a potential threat, simply by virtue of the punches they hypothetically could land on you.

Furthermore, this right to self-defence within pacifism must be limited by a principle of minimal harm. This is already the case in terms of the juridical right to self-defence, for both individuals and states (United Nations, 2016). However, the moral basis for this restriction is not dependent on its legal recognition. Committing *no* harm is often equated with strict non-violence (Morreall, 1976: 35). While the less strict non-violence reflected in this section is the closely related concept of *minimal* harm. The difference between the two is that the latter admits to situations wherein harm is unavoidable. Additionally, this allows for a focus on pacifism not as the avoidance of enacting harm, but rather as the reduction of harm in general. Nonetheless, harm cannot, on this understanding, be combatted by any means. The third and fourth categories laid out earlier, would typically be impermissible. Sabotage, the third category, might be a topic of contention, as some view it as non-violent to destroy property, whereas others have put it on the same level as “assassinations [and] street fighting” (Morreall, 1976: 36). Pacifism cannot firmly commit to sabotage as a legitimate form of resistance, even though certain acts of vandalism bordering on sabotage certainly could make a case for its pacifist character.

### **5.1.2. Strategic Pacifism:**

The pacifism that has so far characterized the climate movement is based not only on these moral arguments, but also on the claim that pacifism is the most effective way to carry out a successful resistance. Strategic pacifism holds that non-violence is a more effective political tool than violence is (Malm, 2021: 34). This is not automatically refuted by the existence of singular scenarios, either thought-of or actual, wherein pacifism appears clearly ineffective. For the point of strategic pacifism is not that it applies in the life of an individual wherein all outcomes in their life would be more beneficial to them if they were to act entirely peacefully. For instance, the most successful course of action when attempting to retrieve a pickpocketed wallet might be to trip the legs of the person running away with your wallet. A strategic pacifist can agree to this and a plethora of other similar

scenarios, as strategic pacifism is a matter relating to social movements and the political outcomes they hope to achieve (Malm, 2021: 34). Furthermore, violence, through the lens of strategic pacifism, is held as particularly harmful to a social movement. Malm cites Roger Hallam, the founder of the climate activism organization Extinction Rebellion, claiming that violence is both unable to “optimize the chance of successful, progressive outcomes” and constitutes a path towards “fascism and authoritarianism” (Malm, 2021: 35).

Non-violence is heralded as “the tactically sound choice” (Malm, 2021: 34). This is claimed along the line of argument that violence would turn away the masses from the cause. This is feared to such an extent that rebel actors not adhering to the overall principle of non-violence are deemed capable of “spoil[ing] the movement” as a whole (Malm, 2021: 35). These claims are made on the basis of a reading of history as evidence for the success of peaceful movements. From the suffragettes to the civil rights movement and the anti-Apartheid struggle; history, according to strategic pacifists like Hallam, are filled with examples of non-violence as a success factor (Malm, 2021: 37-38). However, were these movements truly examples of peaceful resistance? Malm states that this perspective is only possible by creating a “sanitised history” (Malm, 2021: 61). Thus, he offers a different reading of history, taking into account instances of non-pacifism within successful social movements of the past.

## **5.2. Strategic Non-pacifism:**

This is a history that does not centre around singular pacifist icons, such as Gandhi or Dr. Martin Luther King Jr., but rather focuses on the radical actors existing alongside these pacifist actors. First among Malm’s examples is the resistance against slavery. The wide struggle for the abolition of slavery included plentiful acts of non-pacifist resistance, ranging from the guerilla war led by Nanny of the Maroons in Jamaica to the violent insurrections of Nat Turner and John Brown in the United States (Malm, 2021: 39). Perhaps no act of violent resistance to slavery can be held in greater esteem, from a purely strategic point of view, than the Haitian revolution that ended in 1804 with the establishment of a free republic led by previously enslaved people (Malm, 2021: 39). The revolution secured emancipation for the Haitian slaves a whole forty-four years before France abolished slavery across all their colonies, then, too, by means of violent revolution (Stovall, 2002: 651). Malm invokes historian Robin Blackburn who argued that the slave revolts across the United States and the world at large did more to create anti-slavery sentiments among the populous than any peaceful measures did (Malm, 2021: 40). Blackburn noted that “a rising crescendo of revolt[s]” that occurred throughout the early 19<sup>th</sup> century “inclined planters towards compromise” on account of these rebellions making slaveholding increasingly “unsafe” (International Socialism Journal, 2007). These are, to Blackburn, value-neutral historical observations, but to Malm they become arguments for a strategic non-pacifism.

Of course, it could be argued that appealing to the example of the abolition of slavery loses some relevance in the form of being an obvious extreme. Entirely dismissing the examples of slave



rebellions as relevant might be farfetched. After all, the suffering experienced, particularly by the Global South, as a result of the climate crisis is certainly extreme as well. Nonetheless, it is reasonable to search for different historical examples to supplement the case for the successful non-pacifist resistance seen in the slave revolts. Malm goes on to explicate instances of militant tactics from the suffragette campaign. To perhaps an even greater extent than with the abolition of slavery there has been a very clear narrative of pacifism surrounding the suffragettes. George Monbiot, the British writer and activist, even regarded them as role models for a pacifist climate movement (Malm, 2021: 37). The climate movement has, as mentioned, extended the principle of non-violence to property. This does not, per Malm's historical account, fit well with a view of the suffragettes as role models.

The suffragettes began sabotage campaigns in 1908, led by Emmeline Pankhurst and the Women's Social and Political Union (WSPU), consisting of window-smashing and letterbox-torching (Malm, 2021: 40). They eventually escalated these tactics in 1913 and burnt down everything from post offices and villas to theatres and churches (Malm, 2021: 41-42). No one died during this arson campaign, spanning at least 337 attacks, and as such it is an example of a form of action that adheres to a less strict form of non-violence; wherein property destruction is regarded as more permissible than harm caused to human beings.

Another example explored by Malm is the anti-Apartheid movement (Malm, 2021: 53). Nelson Mandela initiated the turn away from strict non-violence by forming uMkhonto we Sizwe (MK), meaning The Spear of the Nation, in 1961 as a militant wing of the African National Congress (ANC) (Malm, 2021: 51). Fed up with the lack of progress made by non-violent methods, and disillusioned by the police brutality of the Sharpeville massacre the year before, they began a sabotage campaign (Mandela, 1964). Mandela justified the shift in tactic by showing that the previous pacifism was predicated precisely on strategic grounds, and the evidence was now against the strategic pacifists. Stating that pacifism was something he supported for as "long as it was effective", and it should be "abandoned" when it ceases to be (Malm, 2021: 53). This abandonment did initially pertain to property destruction as it was their goal to do as little harm as possible, and not resort to armed struggle, a tactic they actively prepared for, until needed (Mandela, 1964). Both the anti-Apartheid movement in South Africa and the movement for women's suffrage in Britain were characterised by a clear display of a particular phenomenon that Malm pinpoint as the backbone of the theoretical argument for strategic non-pacifism. The reason these movements succeeded with their militant tactics is that the violence served as a *radical flank*.

### **5.2.1. The Radical Flank Effect:**

Malm does not merely list examples of successful violence in social movements, but also explains the theory behind *why* this violence worked, when the fear inherent to strategic pacifism was that it would "spoil" the movement (Malm, 2021: 35). The radical flank theory is predicated on the notion that a social movement has the best chance of success when it has a small subset of militant actors to

supplement the pacifist core of the movement (Malm, 2021: 49-50). Thus, Malm does not argue against the point that it is significantly easier to mass mobilise for peaceful actions than it is for militant actions. Neither does he intend to do away with pacifist actions. Instead, he argues that a small group of militant actors, operating on the fringes of any movement, could serve the overall cause in a way that the pacifist core cannot do *by itself*. Primarily, a radical flank instils a fear in the opposition that a peaceful activism cannot do, by creating the concern in the eyes of the state that peaceful mass actions “could so easily turn to violence” (Malm, 2021: 49). Additionally, it helps the mass mobilisation of the peaceful side of the movement, because the pacifist activists appear docile, reasonable and moderate in comparison to the radical actors on the flank (Malm, 2021: 49). This is a strategic approach that characterised both the suffragettes and the anti-Apartheid movement.

The term *suffragettes* typically refer to the WSPU, the organisation responsible for the arson campaign mentioned earlier, whereas the *suffragists* refer to the National Union of Women's Suffrage Societies (NUWSS), who were more populous and peaceful (Philpott, 2020). The WSPU consisted of defectors from the NUWSS; they believed in the same cause, but had lost faith in the pacifist line of action (Pankhurst, 1914: 38). They ended up, as per the radical flank theory, helping each other. Mandela, seemingly very aware of the radical flank effect, created MK consisting exclusively of members from ANC and allying organisations, but distanced the two by naming MK as an “independent body” in their 1961 manifesto (ANC, 2006). Thus, they created the public illusion of two entirely separate entities, and the ANC appeared more moderate as a direct result of having, in fact, become more radical. However, the clearest example of the radical flank effect among the social movements discussed by Malm might be the civil rights movement.

The civil rights movement was famous for its pacifist line and the mass mobilisation it garnered, but it co-existed with a varied radical flank made up of militant organisations like the Black Panther Party and Nation of Islam, anti-pacifists figureheads such as Malcolm X and Kwame Ture, and not least of which a series of riots spanning the nation. Particularly the Birmingham riot of 1963 illustrated the radical flank effect clearly, as it became a “turning point” in the civil rights movement (Malm, 2021: 48). Long-lasting efforts to convince then-President John F. Kennedy to initiate legislative changes on segregation had been unsuccessful (Malm, 2021: 48). On the 11th of May 1963, the Ku Klux Klan, suspectedly in cooperation with the Birmingham police, bombed various establishments typically frequented by Dr. King and other civil rights activists (May, 2011: 72). This caused an outrage, but the political response was lacklustre.

The protests escalated to a riot that ranged from the throwing of rocks to the burning of businesses and deadly clashes with the police (McWhorter, 2013: 427-432). This saw a quick political response, and as such the hypocrisy of the government was put on display for the nation. The same government that time and time again had looked the other way when the Ku Klux Klan and others had lynched, raped

and murdered black people, reacted immediately once black people started fighting back. Malcolm X frequently pointed this out in his speeches, by stating that it was first when white lives were in danger that Kennedy viewed it as “a moral issue” (Breitman, 1965: 14). Malcolm X was not alone in his assessments, as several historians have described this riot as a watershed moment in the civil rights movement. Timothy Tyson highlighted that “the threat of violence was... critical to the success of nonviolence” (Tyson, 1996: 149). This was made explicitly clear from discussions had by the Kennedy brothers in a meeting on the 12th of May 1963. They stated that to avoid “trigger[ing] a great deal of violence” from the civil rights movement they had two “means of providing relief”; sending federal forces to protect the black population from the immediate threat of the Ku Klux Klan or “send[ing] legislation up to congress this week” (Rosenberg, 2003: 97-99). That is the radical flank effect, that the masses mobilised by the pacifist line are perceived as a threat because a minority within the movement has shown a willingness to resort to more radical means.

### **5.2.2. Property Destruction:**

Malm continues throughout the book to list historical examples of the radical flank effect, and implores the climate movement to adopt its own radical flank. He compares the role of Greta Thunberg to that of Rosa Parks, as he notes the need to have “an Angela Davis or a [Kwame Ture]” to compliment the moderate centre of the movement (Malm, 2021: 51). These two figures, among the others appealed to by Malm throughout the book, promoted and enacted forms of resistance that far exceed what we have seen in the climate movement thus far. This raises the question of precisely how radical such a flank ought to be in the case of the climate movement. Should it engage in arson campaigns targeting empty buildings like the suffragettes? After all, Malm refers to these actions as instructive, and appear partial to this form of actions over armed struggle for instance (Malm, 2021: 40).

Malm is critical of the claim that “property destruction is violence” (Malm, 2021: 102). Instead of arguing directly that violence is permissible, and as such completely abandoning the pacifist line, he opts for a compromise of sorts. He promotes an extensive form of property damage, that is to say sabotage, that certainly goes far beyond the realm of light vandalism. It does not fit within the framework laid out for pacifism in the previous chapter, except for on an overly lenient interpretation, but it, nonetheless, does not amount to an unequivocal form of violence. Malm describes life as “sacred”, something with an intrinsic value that ought to be protected (Malm, 2021: 103). Property, on the other hand, exists only to “serve life” and has no “personal being” (Malm, 2021: 103). It has no value in itself. This is not to say that all property is equally undeserving of preservation. For instance, he notes that if “people went around throwing bricks into cafés” it would be an unwanted situation (Malm, 2021: 104). This does not mean that cafés, like human lives, are sacred, or that a destruction of them would be impermissible, but rather that they ought not to be equated with the particular properties that Malm proposes that a climate movement should target.

Malm cites the essayist John Lanchester as he describes terrorism as the “most effective form of political action” for the individual, yet it has remained absent in a struggle as longstanding as that of the environmental movement (Malm, 2021: 11). In spite of a nearly endless array of potential targets for such actions carried out by individuals. From oil tankers and gas stations to company offices and pipelines. Particularly “CO<sub>2</sub>-emitting property” is held as a favourable target for sabotage attacks; on account of becoming a “disincentive” for investment and establishing precisely how vulnerable the fossil industry is to such actions (Malm, 2021: 69). This could be carried out by a small group of people, but have ripple effects to shape the movement as a whole. Thus, Malm agrees with the strategic pacifist argument that a small radical flank affects the movement as a whole, but he illustrates this as a positive effect.

Acts of terror committed by a few individuals in the name of a wider social movement has occurred many times in the past, in a bid to serve the role of a radical flank. Bhagat Singh and Batukeshwar Dutt detonated two smaller bombs in the Central Legislative Assembly in India in 1929 as a protest against the British colonisation (Moffat, 2016: 84). They, in turn, had been inspired by a similar act in the French parliament thirty-six years prior, performed by a single individual; the anarchist Auguste Vaillant (Goldman, 1970: 152). The bomb was largely symbolic and did not kill anyone. Malm argues that “killing is central to what terrorism is”, and so it might be best described not as terrorism, but rather a dramatic form of sabotage (Malm, 2021: 108). It offers an example of a Malm-like act of resistance. A person exerting damage to property rather than people, and being notably more radical than the core of the movement to which they belonged, so as to bring to the resistance something that pacifism alone could not.

Actions like these are too aggressive to be in line with a strict definition of self-defence, but the attempts to avoid harm make the departure from pacifism merely partial. A greater departure from pacifism, by engaging in the fourth category presented at the beginning of the chapter, armed struggle, is not something Malm explicitly calls for. However, he does not criticise the violence he introduces in his case for strategic non-pacifism. While his focus is on sabotage, the movements he argues that the climate movement should be inspired by often engaged in acts beyond this. For instance, the suffragettes targeted, in their arson campaign, the private homes inhabited by people with “anti-suffrage” sentimentalities (Pankhurst, 1914: 214). While Malm admits that it would be “historically dishonest” to claim that the anti-Apartheid movement never employed more violent methods than sabotage (Malm, 2021: 191). MK’s sabotage campaign was characterised by the focus on “hard targets”, such as military installations and other guarded buildings; the result of which was that 130 people were killed in the span of a decade, the majority of them civilians (Minyuku, 1998). These acts, indicative of some of the more radical forms of resistance in movements Malm present as instructive, might not necessarily fit into the framework of non-pacifism.

Sabotage could represent the next step for the climate movement, but that would not mean it is the final destination of it. Malm, in the penultimate sentence of his book, invokes Fanon. Declaring that the time is past for the Gandhian climate movement, and questioning if there will be “a time for a Fanonian one”. (Malm, 2021: 161). This leaves the door open for a resistance that is more radical than the sabotage acts he proposes, and so that is what the next section will explore; a Fanonian climate movement, and what it might look like.

### **5.3. Moral Anti-pacifism:**

Frantz Fanon wrote about decolonisation, and particularly the Algerian struggle for independence, as he himself was a participating member of the Algerian National Liberation Front (Bhabha, 2004: viii). Unlike Malm, Fanon discussed armed struggle in no uncertain terms, and his expressed favour of it. Stating that decolonisation was not merely something that could be achieved through violent means, as argued by Malm’s strategic non-pacifism, but rather that “[it] is always a violent event” (Fanon, 1963: 1). It is the necessity for violence in Fanon’s writing, and his embrace of it as a moral concept, that leads to the characterisation of his approach as one of *anti*-pacifism.

#### **5.3.1. Liberation:**

An essential term in the Fanonian vocabulary is *liberation*. The term, as used by Fanon, is meaningful particularly in terms of what it denotes of that which a resistance is the liberation *from*. A liberation is, here, not merely an act of becoming free, but an emancipation from a violent system of oppression; such as colonialism in his case, or fossil capitalism in the case of the climate movement. The colonial system is described as one in which life, “for the colonized”, is reduced to a mere survival; the act of not dying (Fanon, 1963: 232). A liberation from this system is not an individual act of fleeing to another place, but rather the total overthrow of the system itself. One is liberated by “blow[ing] the colonial world to smithereens” (Fanon, 1963: 6). Thus, it is an approach to resistance that allows for, and incites, radical action. That which sustains the oppressive system should not, to Fanon, merely be removed in some capacity, but rather be entirely incinerated. Lifted from its roots, so as to ensure that the liberation is complete. The means by which he suggests this is to be done is precisely the means used by the movement to which he belonged: armed struggle.

As soon as the colonised “discover their humanity”, that which has been denied them by the colonisers, they “begin to sharpen their weapons” (Fanon, 1963: 8). To Fanon, armed struggle is the natural consequence of the brutality of the oppression. For no one can be expected to sit idly by as they are subjected to such brutalisation. This right to liberation from an oppressive system, through violent means, is every bit as self-evident to Fanon as would be the right of Rafiq to defend himself against a mass shooter. Malm, and even a moral pacifist, could argue for the morality of Rafiq’s act of self-defence. Fanon, however, would hold the very system of white supremacy, and that which upholds it, as legitimate targets for the kind of actions Rafiq first committed when faced with a concrete threat of violence. The point at hand is that Fanon describes a violence inherent in oppressive systems, and as

such the use of violence in resistance is no longer seen as excessive, but rather necessary. He declares the oppression a “naked violence” that can only be overcome by a “greater violence” (Fanon, 1963: 23).

It can be argued, in opposition to Fanon, that violence has been ineffective in removing oppression, as the times it has overthrown an oppressive regime it has often become a new one itself. Algeria, for instance, did win its independence, but thirty years later the conceived *carte blanche* for the use of violence during the struggle for decolonisation was used to justify violence within the Algerian society in a civil war (Githens-Mazer, 2009: 1022-1023). To which a Fanonian response might be that the liberation from a particular oppression, by the means necessary, is no less a right merely because a new oppression arises later. Decolonisation, like socialism, is a negative utopia defined by that which it abolishes, not by that which it becomes. Thus, while what becomes of it is far from irrelevant, the right to violent resistance, for Fanon, lies in the brutality of the oppression, not in the perfection of its absence.

### **5.3.2. Violence as a Cleansing Force:**

Fanon does not only make a strategic argument for violence as a necessity in resistance, but also a moral one. Resistance is often discussed in light of pacifism, and the extent of the exceptions permitted from this unwavering principle, but for Fanon pacifism is not the rule to begin with. Malm cites Fanon once in his book, and it is on precisely this topic; the description of violence as a “cleansing force” (Malm, 2021: 161). Violence is viewed here, not primarily as something strategically effective like it mainly is for Malm, but as an inherently positive thing. Immediately this can appear like a strange statement, because moral pacifism is often taken for granted as the *prima facie* truth, only adjusted by a series of exceptions as they arise. However, the context of the quote related not to violence in general, but the violence of the colonised against the colonialism oppressing them (Fanon, 1961: 51). He goes on to describe how, on the “individual level”, violence can rid the colonised of their despair and “inferiority complex” (Fanon, 1961: 51). This inferiority complex is particularly prevalent in a form of oppression based on white supremacy. However, an inferiority complex arises in all systems of oppression, for the oppression is always “legitimised” as the status quo.

Revolutionary violence is presented as the most decisive manner in which a person can state that they do not believe themselves to be inferior. Civil disobedience accomplishes this to some extent, as a refusal to follow the laws of the oppressor allows the oppressed to clearly indicate to themselves that they are not, in fact, inferior. However, civil disobedience, when civil and peaceful, still adheres to a law imposed by the oppressive system; a moral law demanding civility and peacefulness. A standard that is unproblematic to live up to for the privileged that benefit from the oppressive system, be it colonisers or capitalists, but impossible to adhere to for the oppressed without denying themselves their humanity. This is what Fanon means when writing that the colonised “discover their humanity”

(Fanon, 1963: 8). Liberation, as described by Fanon, is a revolutionary process, and through it a person ceases to be a “thing” and becomes a person (Fanon, 1961: 2). Thus, violent resistance opposes all the laws, legal and moral, established by the oppressors, and as such becomes a cleansing force. This makes violence, for the oppressed, valuable beyond its mere utility.

The implication of not viewing pacifism as inherently morally superior to violence cannot be overstated. It means that violence, in its many different forms, is no longer an undesired tool used only when absolutely necessary, but rather a possible foundation for the resistance itself. It can only stem from viewing the thing being resisted, the oppressive system, as violent in itself. A view like this makes violence not merely a particular way to resist, whereas peaceful resistance is another, but violence becomes itself resistance. It is commitment to the one thing that the oppressors have monopolised. Thus, burning down the office of a fossil fuel company or blowing up a pipeline would not merely be an effort to stop the threat they pose to the environment upon which we depend, but also a way to reclaim the humanity denied people through the active destabilisation of the climate.

What does this mean for the climate movement? Fanon wrote about decolonisation; can the same principles truly be applied to the climate movement? The systemic oppression of decolonisation and slavery were so total, as were those of apartheid, segregation and the exclusion of women from the political arena, that no comparisons should be made lightly. Yet, there is an eerie similarity in the language of this liberation and that which is accomplished through a revolution against capitalism; they both concern, in each their own way, the re-personification of persons. The colonised cease to be a thing, and become instead a person again, and likewise a socialist revolution would ensure that workers cease to be commodities. These similarities are not accidental, and they are both based in the same understanding of the enemy not as a looming threat, but as an oppressive entity; a system to be overthrown. It is through this lens, that of an eco-socialist revolution, that Fanon cannot be discarded as irrelevant to the climate struggle, and Malm’s invocation of Fanon remains topical.

#### **5.4. Limitations to Violence:**

If left unchecked, a Fanonian climate movement would seemingly justify any and all acts, and so a set of limitations to violent resistance must be discussed. The search for a moral limit at play lies in the difference between the violence of the oppressor and the violence of the oppressed. No act of liberation must become, in itself, an act of oppression. Therefore, a Fanonian climate movement cannot do whatever it wants. Some acts, for instance, are inherently oppressive, such as sexual violence. If Nat Turner had ordered his fellow abolitionists to rape the white women on the plantations, then it would have clearly been a morally illegitimate act. For a struggle against racial oppression does not justify an instance of patriarchal violence. Similarly, any act of racial violence by Emmeline Pankhurst or other suffragettes would be equally morally illegitimate. It becomes a matter of power relations, and not abusing power.

Thus, another limitation is the one that occurs once one becomes the arbiter of power. Not any and all behaviour post-liberation can be accepted, because the liberators must be held to an equally high standard. Liberation is intended to successfully legitimise a revolution, but then also delegitimise counter-revolutions against itself. Otherwise, one would only legitimise an endless cycle of revolutions with none of the benefits of initiating a revolution in the first place. It is, thus, in the moral content of the system one implements and maintains that the legitimacy is found. Just as the legitimacy of the eco-socialist revolution is found in the oppressive and destructive force of fossil capitalism, so must eco-socialism, as an established system, avoid becoming an oppressive or destructive force. The eco-socialist revolution must restore that which its antithesis destroyed; from the social metabolism with nature to the intrinsic human worth. In other words, the climate movement, as a movement towards eco-socialism, is bound by the principles of eco-socialism. This sets moral limitations to the free exercise of violence.

Any instances of moral limitations being transgressed must be scrutinized, but this can be done without condemning the entire movement as such. Something can be morally legitimate on the whole and misused in the particular at the same time. And that is perhaps the primary contribution of the Fanonian perspective, not as an exact guideline for resistance, but rather the crafting of a space for resistance to operate in. Not free from any and all moral condemnation, but free from the moral condemnation that stems from a position of oppression, such as a demand of civility in the face of systemic brutality. Malm provides a potential blueprint for the climate movement going forward, whereas Fanon offers a lens through which its actions can be understood.

#### **5.4.1. The Quiet Beginnings of a Fanonian Climate Movement:**

It is conceivable that the eco-socialist revolution could require Malm's, or even Fanon's, tactics. The climate movement has, thus far, been unable to pose a tangible threat to fossil capitalism. While it is tempting to steer clear of non-pacifism, and even more so anti-pacifism, it cannot be ignored that Malm and Fanon contribute valuable perspectives to the topic of an abolition of fossil capitalism. Malm contributes a criticism of strategic pacifism that illustrates the revolutionary potential in a radical flank. Whereas Fanon's perspective of liberation from an oppression through the destruction of a harmful system bears similarities to the eco-socialist analysis of fossil capitalism. Both oppose an oppressive system which they mean to overthrow in its entirety; be it colonisation or fossil capitalism. Furthermore, both eco-socialism and liberation aim at the re-personification of persons. It is, perhaps, not unthinkable that the former could require tactics borrowed from the latter.

The primary reason, however, for viewing the struggle for eco-socialism in conjunction, perhaps, more so with Malm and Fanon than with Hallam and Monbiot, is the direction in which the climate movement is going. A Fanonian climate movement, whether one wishes for one or not, is likely on the way in some capacity. Already it has, partially, begun in certain parts of the Global South. The Temb  people and the Quilombolas in Brazil, who, as mentioned in the first chapter, have faced decimation of



their land by the palm oil company Brasil BioFuels S.A., have not stood idly by. Last year they sabotaged the tractors used for the purpose of extracting palm oil from their land (Mendes, 2022). This year, however, BBF has accused them of holding 30 employees captive for three days, acts of arson and even armed resistance (Mendes, 2023).

With more suffering on the way, as climate breakdown intensifies, the quiet beginnings of a Fanonian climate movement, centred around land disputes in the Global South, might just spread to the rest of the world in time. The environmental crisis and its decimation are spreading across the globe, and so we should not be surprised if Fanonian sentiments do the same. Fossil capitalism, through a worsening climate crisis, is setting the stage for the resistance against itself. That resistance is liable to have a flank that is increasingly radical for each year gone by without a mending of the metabolic rift. For each year gone by without an eco-socialist revolution.

## Conclusion:

This paper has been an investigation into the climate and ecological crises as systemic issues stemming from capitalism, and the bearings this has on the sustainable society that must be created and the ways of overthrowing the fossil capitalism of today. I have explored the seeming disconnect, between the severity of the crisis and the efforts done to prevent it, through a reconstruction of Foster and Clark's position in *The Robbery of Nature: Capitalism and the Ecological Rift*. Their presentation of the environmental crisis as intrinsically tied to capitalism centres around the thesis of a metabolic rift. A separation of humans from the rest of nature through economic activities that commodify nature. It is this commodification of nature, characterised by an incessant extraction and expansion, that is explored as the primary cause, and source of maintenance, of the environmental crisis.

Capitalism is described as a system of a particular set of property relations. These property relations, in turn, necessitate certain internal imperatives that are inherently incompatible with a mending of the metabolic rift. A pair of paradoxes that occur in tune with the principles of capitalism are outlined, for they demonstrate the point of Foster and Clark's thesis. The Lauderdale Paradox illustrates the creation of artificial scarcity under capitalism, wherein the exchange value of a commodity increases when there is less of it, and as such the capitalist economy builds wealth through the impoverishment of society. Economic growth, then, in the form of an increase in monetary wealth, decreases the real wealth that nature has to offer. The destruction of nature, under capitalism, becomes merely a step in the process of the accumulation of capital. The second paradox described in this paper is the Jevons Paradox, and its rendering of technological advances unable to decrease extraction from nature. The growth imperative of capitalism motivates maximised production output, even when technology makes it possible to produce the same amount as before with fewer resources spent.

These issues amount to an incompatibility between capitalism and ecological sustainability. Raworth, through her work *Doughnut Economics*, provides a framework for measuring the sustainability of economic systems. Their ability to establish a social foundation, consisting of the material needs of a society, and not crossing any of the nine planetary boundaries formulated by Rockström, would deem an economic system sustainable. Four economic systems, discussed by Foster and Clark, are tested against this framework; modern capitalism, promethean "socialism", green capitalism and eco-socialism. The first model, dubbed fossil capitalism for the monopoly the fossil industry has attained under it, is deemed unsustainable as a purely empirical matter. It has exceeded six of the nine planetary boundaries. Likewise, promethean "socialism", as a growth-intensive system conceivably led by the proletariat, has also proven to be unsustainable throughout history.

Green capitalism, a thought-of version of capitalism adhering to ecological concerns, was explored through a reconstruction of Hawken's suggestion in the book *Natural Capitalism: The Next Industrial Revolution*. This form of green capitalism, characterised by an increase in technological efficiency,

aims to impose new imperatives unto capitalism. Among these is the protection of nature as a form of natural capital to be prioritised over financial capital. The technological advancements that Hawken based his theory on were shown to be irrelevant as he had not taken the Jevons Paradox into account. Whereas the desire to prioritise natural capital over financial capital demonstrated a misunderstanding of the consequences of the precise property relations under capitalism. The capitalist, being in their position by virtue of their ownership of the means of production, must view nature as nothing more than a potential source of financial capital. The project of green capitalism is deemed impossible.

The final economic system, eco-socialism, is described as a system that mends the metabolic rift through the abolition of private property. A set of principles are devised for it, and they include the use value system and an enabling of the realisation of human capabilities. The paradoxes and incentives that hindered the green capitalist project do not impact eco-socialism. Eco-socialism is, thus, concluded as a sustainable economic model, for it amounts to the complete abolition of fossil capitalism. Eco-socialism would represent a less excessive society, and one that can allow for degrowth of the economy. Nonetheless, it would not be a minimalist system, instead expanding the space for humans to flourish and regain their humanity.

An eco-socialist revolution is named as humanity's only hope in the face of the climate and ecological crises. This climate movement, urged to take on the character of an eco-socialist revolution, is examined through three different approaches to resistance; pacifism, non-pacifism and anti-pacifism. The pacifist approach, through a reconstruction of Malm's book *How to Blow Up a Pipeline: Learning to Fight in a World on Fire*, is shown to have been unable to abolish fossil capitalism. The non-pacifist alternative by Malm, and its focus on the destruction of the property of the fossil industry, offers a concrete alternative to efforts seen so far in the climate movement. Malm, however, leaves the door open to explore more radical alternatives, and so the Fanonian approach of anti-pacifism is explored. This approach would view the abolition of fossil capitalism as a form of liberation, and consequently motivate radical means to carry out this liberation. The concept of a Fanonian climate movement, as contemplated by Malm, is considered to be a useful notion to entertain. Both by virtue of the perspective it lends to the understanding of resistance as something that cannot be played by the rules set by the oppressor, and, more so, on account of the realistic possibility that it represents the direction the climate movement eventually will take.

The hope, with this thesis, has been to build upon Foster and Clark's contributions to the understanding of the environmental crisis, as well as Malm's investigations into the possible resistance against it. To add to the literature on the climate and ecological crises as an alternative to the predominant presentations of it. Hopefully bringing the academic research a small step closer to capturing the essence of the issue. And, if possible, moving the needle incrementally closer to mending the metabolic rift and doing away with the fossil capitalism plaguing the planet and the people on it.

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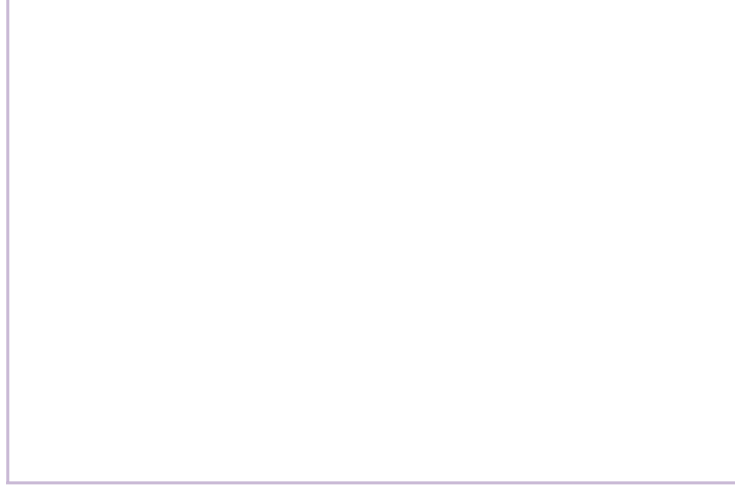
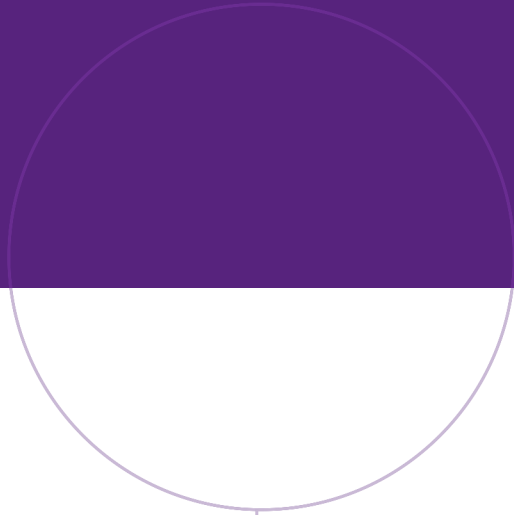
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