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A Kingdom of Reason

Applying methodological contextualism to a comparison of Karl Popper and Friedrich Engels' conceptions of science

Preface

Writing this thesis has been equal parts interesting, frustrating, and instructive.

I would first of all like to thank my supervisor, Tyson Retz. Our meetings discussing the thesis, and his helpful tips and guidance, have proven invaluable.

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Abstract

This Master's thesis compares the scientific ideas of Karl Popper and Friedrich Engels through a lens of methodological contextualism, an analytical and methodological framework developed by the historian of ideas Quentin Skinner.

The thesis question it seeks to answer is the following:

“How do Karl Popper and Friedrich Engels' philosophies of science compare?”

The analysis concludes that there are several novel and significant ways in which Popper's and Engels' ideas of science are more similar than is often assumed and argues that these similarities can be understood in the light of methodological contextualism. Specifically, the thesis argues that both authors sought to intervene in contemporary discourse and politics via a thoroughgoing scientific critique of various politico-philosophical schools of thought as well as construct an alternative politics based on the same scientific notions. This general similarity in intent and method lead them to develop some similarities in their conceptions of science. Likewise, the significant and fundamental difference between their notions of science is argued to be, at least in part, due to their dissimilar context and political ends.

The relevance and contribution of this thesis is a development into the understanding of the connection between the ideas of Friedrich Engels and Karl Popper.

Sammendrag

Denne Masteroppgaven sammenlikner Karl Popper og Friedrich Engels sine vitenskapsfilosofier via Quentin Skinner's metodologiske kontekstualisme.

Problemstillingen oppgaven forsøker å besvare er som følger:

«Hvilke likheter finnes det mellom Karl Popper og Friedrich Engels sine vitenskapsfilosofier?»

Analysen konkluderer med at deres vitenskapsfilosofier deler flere viktige og relativt lite anerkjente likheter, og at disse kan forstås i lys av metodologisk kontekstualisme. Oppgaven argumenterer for at begge tenkere ønsket å intervensere i kontemporær politisk diskurs via en gjennomgående vitenskapsfilosofisk kritikk av politiske og filosofiske retninger, i tillegg til å legge frem en alternativ politisk tenking basert på den samme vitenskapelige filosofien. Denne generelle likheten i intensjon og metode ledet dem til å utvikle likheter i deres oppfatning av vitenskapsfilosofi. På samme måte, den betydelige og grunnleggende forskjellen mellom dem argumenteres for å være delvis på grunn av deres forskjellige historiske kontekst og politiske mål.

Denne oppgavens relevans er et bidrag til den historiske forståelsen av forbindelsen mellom de vitenskapsfilosofiske ideene til Karl Popper og Friedrich Engels.

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1. Introduction

“Science may be described as the art of systematic oversimplification.”

— Karl Popper

In this introductory chapter I am presenting the different aspects of the thesis, such as the thesis question, its relevancy and so on. The chapter is divided into four sub-chapters. In the first sub-chapter I present and discuss the thesis question, its relevancy as well as the state of the research on the topic of the thesis. Furthermore I give a brief overview of how I will go about researching and answering the thesis question, as well as what I will argue for throughout the thesis.

In the second sub-chapter of the introduction I present the historical context of the thesis by presenting and discussing the historical context and legacy of the thinkers in question. For the third sub-chapter I present an overview of the entire thesis, outlining each chapter and its contents. In the final sub-chapter I briefly summarize all the aforementioned points.

1.1 Why Compare the Scientific Ideas of Popper and Engels? – Thesis Question and Argumentation

In this subchapter I will present and elaborate on the thesis question and my argumentation, how I will attempt to answer it, its relevancy as well as the state of the research concerning the topics covered by the thesis question.

My thesis question is as follows:

“How do Karl Popper and Friedrich Engels’ philosophies of science compare?”

While this thesis question might seem broad, I have chosen to narrow it down to some concrete points regarding three important aspects of science. In comparing the ideas of Popper and Engels, the following components of their philosophies of science will be analysed: human knowledge (epistemology), the nature of reality (ontology) and scientific attitude. Furthermore, I will analyse and compare the ways they connected their philosophy of science to politics and history.

In chapter two discuss my methodology and sources, and in chapter three apply the methodology in order to arrive at a definition of Popper and Engels' theories.

Then, bearing the established understanding in mind, in the listed chapters I will analyse the following aspects of their ideas of science:

4.1 Popper and Engels' View on Knowledge Justification

4.2 Popper's "Three-Worlds Theory" and Engels' Materialism

4.3 Popper and Engels on Scientific Attitude

4.4 Popper and Engel's View of the Relationship Between Science, Politics, and History

The first question concerns how Popper and Engels viewed knowledge, and the acquisition of knowledge. The second question deals with their metaphysics, in other words how they viewed the nature of reality. The third question deals with what the thinkers argue constitutes a scientific attitude. The fourth and final question deals with how the authors saw the connection between their ideas on science and society, as well as what they considered a scientific politics.

Concretely, what I will argue is that both men sought to intervene into their historical context by establishing a scientifically grounded political thought, which would serve as both a critique of "harmful" political ideas as well as buttress their own political visions. Likewise, their differences may be explained by their different historical context and political aims. Furthermore I will argue that such a line of analysis and argumentation shows that there are areas in which the two thinkers do in fact share some perhaps novel and significant similarities, but that fundamentally their conceptions of science are dissimilar.

1.1.1 Relevancy

Popper and Engels are often conceptualised as thinkers who represent more or less diametrically opposed and irreconcilable philosophical and historical trends. Engels on the one hand was a godfather of Marxism, together with Marx, an ideology which

inspired the Leninist movements as well as other major socio-political trends of the 20th century (Hunley, 1991, p. 18). Popper on the other hand is often seen in the context of both a rejection of these very movements and the philosophy which underpinned them. Furthermore, Popper was an influential figure of post-war liberalism, which famously stood opposite the Leninism of the socialist camp of nations in the cold war (Hacohen, 1998, p. 711).

Initially, I was interested in researching Popper's conception of Marxism to gain an understanding what understanding of the ideology Popper was operating with when he was developing his critiques. While reading up on Popper's ideas, specifically in trying to develop an understanding of his view on science and his critiques of Marxist philosophy I found that there were several points in his book *Knowledge and the Body-Mind Problem* which reminded me of the sort of dialectical conceptions found in some of Engels' works.

These apparent similarities ran counter to my conception of Popper and Engels' writings, which I understood as being more or less irreconcilable. While it goes without saying that there can obviously be superficial similarities between ideologies or modes of thinking, I found these and other similarities to be significant as they represent an analysis which runs counter to the perception of Popper and Engels, or indeed Popper and Marxism. So one major reason why I became interested, and why I would argue that such an undertaking is a worthwhile pursuit is the possibility of a reappraisal of the ideas of these two influential thinkers and the relationship between them. A relationship which I would argue is in itself an important one, owing to Popper's influential writing on Marxism.

Another reason why such a comparison is interesting, and worthwhile, is the fact that there is a relative scarcity of research on the topic of Popper and Engels. This relative scarcity is perhaps natural, seeing as Marx and Popper have a "direct" connection. A connection owing to the fact that Marx' writings have had nothing less than an "enormous impact" on history (Inglehart, 2000, p.19), and that Popper's ideas in turn "became the conventional postwar critique of Communism" (Hacohen, 1998, p. 732).

This relative scarcity is the subject of the article *Popper's Unacknowledged Debt to Engels* by Ashish Lahiri. In the article, Lahiri argues that not only are there significant similarities between them, but that Popper even could be in some sense indebted to Engels for some of his ideas of science. Lahiri goes so far as to suggest that Popper in some sense built on ideas which were developed by Engels. Concretely suggesting that Popper could have read Engels' *Dialectics of Nature* and drawn from it ideas on non-inductive sources of knowledge, i.e. experimentation (Lahiri, 1998, p. 2837).

Such a claim struck me as rather bold, and the suggestion led me to consider how best to understand and research the meaning of the observed potential similarities and dissimilarities between them. This question of meaning in the history of ideas is the subject of chapter 2, wherein I discuss the methodology I have chosen.

As we can see, a comparison of Popper and Engels is especially interesting not only because of the potential for novelty and the scarcity of academic writing on the subject, but due to the character and significance of the common view of their ideas and the relationship between these ideas. Thus the immediate academic relevancy of this thesis lies in re-examining the relationship between two figureheads of and contributors to liberalism and socialism. These are ideologies which since their conception have had major impacts on world historical events as well as impacting social and economic relations in fundamental and significant ways.

1.1.2 How to Answer the Thesis Question – Methodology Overview

Having now laid out the broad themes of the thesis as well as its academic relevancy, the question of how to research this topic remains. Indeed, even if Lahiri's suggestion that there is some novel and significant overlap between them holds true on a first reading of the material, it would still from a historical question be a matter of understanding this overlap and its meaning. Furthermore, I wish to investigate not only the specific example that Lahiri introduces but conduct a broader investigation on the relationship between their philosophies of science.

To inform such an investigation and analysis I will be applying the analytical framework of methodological contextualism developed by Quentin Skinner. Skinner argued that texts are rendered meaningful from a historical perspective by viewing them as

interventions into and in a historical context. In viewing their ideas as speech acts and as interventions in a historical context I will attempt to establish a basis of comparison through an understanding of what the authors intended to convey. Furthermore, such a reading I argue will provide insight into how they came to develop the similarities and differences between them and the broader meaning of this relationship. In other words, this thesis seeks to compare the fundamental scientific ideas of Karl Popper and Friedrich Engels, by first interpreting their ideas through a methodological contextualist lens. The main advantage of such a reading compared to a stricter textual analysis is a consideration of each author's *intent*.

Furthermore, I will argue that the historical circumstances Popper and Engels were operating within not only helped shape their ideas, but also go a long way to explain the similarities and differences between their philosophies. Here, my chosen methodology will enable me to further this line of argumentation. This is not to say that the thinkers had similar intents. Indeed, there are several stark contrasts between them both political and philosophical in nature. For example, while Engels was a prominent member of the left-wing International Workingmen's Association (Oittinen, 2015), Popper on the other hand helped found the liberal think-tank Mont Pelerin Society (Innset, 2016, p. 70). While Popper and Engels might have sought dissimilar political ends, I will argue that they share a similar impetus and context for their speech acts, namely analysing and impacting ideas of politics and history from a scientific point of view.

I will argue that a comparison of the ways in which their thinking either diverges or overlaps is rendered more meaningful through the lens of Methodological Contextualism. Furthermore, I will argue that a pure textual analysis might lead one to conclusions which might be misleading in this regard, and I will provide examples of just such instances where similarities and differences are either exaggerated or downplayed when not considering context. In other words, by considering the historical context, as well as the intentions of the two men and the ways in which they sought to intervene in their context, we can draw out further meaning from their texts over and above a pure textual analysis.

1.1.3 The State of the Research

As mentioned earlier, I was originally intending to compare Marx and Popper, but quickly found that the links between them as well as the criticism of Marx and Marxism by Popper was relatively well-trodden ground. However, in my survey of the literature I got the impression that the links between Engels and Popper were not as well researched. It is perhaps natural that the topic of Popper, Marx and Marxism should be relatively more common in the literature, seeing as Marx is considered a more significant thinker than Engels and the fact that Popper makes him the subject of writing and critique.

Doing an English language search for “Popper and Marx” on the digital library JSTOR yielded some 5 470 results, whereas searching “Popper and Engels” yielded 1 410 at time of writing. This very brief and unsystematic overview I just presented is of course no definite or reliable statement on the state of the research, but I would argue that it still provides some insight into the matter. Furthermore, reading through the first pages of articles that appeared for the latter, it would seem that only one of them deals directly with this connection – namely the paper by Lahiri, mentioned earlier, wherein the author discusses the lack of research on that very connection.

The paper “Popper’s Unacknowledged Debt to Engels” Ashish Lahiri backs the observations I have discussed so far, drawing attention to the “hitherto unacknowledged similarities between Engels and Popper’s views on various scientific issues such as non-inductive sources of knowledge and confirmation or refutation of these through observation. He further writes that in his survey, albeit limited as he himself points out, of the literature both by and on Popper he has not seen any discussion surrounding this issue (Lahiri, 1998, p. 2837).

There seems, then, to be relative scarcity of research on the question of Popper and Engels. Compounding this issue is the state of the research on Engels’ ideas in general. In the book *Friedrich Engels and the Dialectics of Nature*, the author notes:

For the last twenty years or so, scholars have hardly been bothered with Engels’ philosophy. The topic seems to have lost its heat; it has perhaps died away. Surprisingly, now might be a better occasion to take up the issue once again. (Kangal, 2020, p.4)

To summarize, the connection between Popper and Engels remains a relatively under-researched area, and this is a factor which I will argue makes this thesis relevant.

1.2 Historical Context

Having now laid out an overview of just what I will be researching and arguing throughout the thesis I will give a broad overview and introduction to the material and the context of the material, connecting it to my arguments and analysis. The purpose of this chapter is to place the authors into a historical context as to give a general idea of the context they were operating within. In other words I will give an overview of Karl Popper and Friedrich Engels, their central ideas and historical context, as well as how they relate to my thesis. However, a more thorough treatment of their theoretical perspectives as well as its connection to their historical context will be provided in chapters 3, 4 and 5.

1.2.1 Karl Raimund Popper

Karl Raimund Popper (1902-1994) was an Austrian-British philosopher born in Vienna. He was influential in the development of modern scientific method, being known perhaps primarily for his role in the development and popularisation of the idea of falsifiability as a criterion of scientific validity (Horgan, 1992, p. 38). Not only lauded for his works on science and scientific method, Popper is as already mentioned also widely regarded as a significant contributor to political liberalism, especially in the post-war era (Faever, 1971, p. 6-7).

In the article "Popper, Vienna and the Red Circle" the scholar Hacoen sketches out a narrative of Popper's life and historical context. In the opening paragraphs he homes in on two contexts for Popper's writings, namely a pre-war Viennese context and a post-war emigree context. This transition from a pre-war Central European context to a cold-war Atlantic intellectual context is the focal point of this sub-chapter, which will serve as the backdrop for further analysis of the ways in which our understanding of his ideas is shaped by an understanding of his intent and historical context.

In this chapter we will look at Popper's life in Vienna, and his involvement with the philosophical circle known as the Vienna Circle, as well as his involvement in Viennese politics. Then, we will examine his life and work after his exile. It bears repeating that a treatment of the ways in which these contexts help us understand Popper's intention, and the ways in which these contexts impacted Popper is the subject of chapters 3 and 4.

Popper had in his youth been caught up in the political and social movements connected to worker's movement which swept the globe at that time. Growing up in Vienna, a hot bed of political tension in the early half of Hobsbawm's "Age of Extremes" (Sharpe, 1997, p. 121), he involved himself with various socialist organizations and endeavours (Hacohen, 1998, p. 720). Although he would eventually come to reject socialist politics, his experiences with political struggle had major impacts on his political and scientific thinking. In later chapters I will argue that this experience is a parallel to some of Engels' foundational experiences and context.

In his youth in Vienna, Popper had been surrounded by progressive politics. Although the liberalism of Vienna had a socially conservative streak to it, the politics which Popper grew up in was a marginal, but active, group of progressive liberals who could mostly be found in the Jewish populated districts of Vienna. This context "constituted young Popper's social and intellectual milieu". The political goals of this group was the promotion of a wide range of reforms including scientific education, universal voting rights for men as well as welfare reforms (Hacohen, 1998, p. 714).

This world, however, would not survive the cataclysm of the First World War. Popper remarks: "The breakdown of the Austrian Empire and the aftermath of the First World War ... destroyed the world in which I had grown up,". In the social turmoil and misery which characterised Austria after the first world war, Popper joined the socialists, and later on, the communists. His involvement in radical politics would not last long, however, and would end with him distancing himself from the communist movement after their failed 1919 coup d'état (Hacohen, 1998, p. 719). The events surrounding the failed communist coup would leave a lasting impression on Popper. Hacohen writes: "The defeat of Austrian socialism and the collapse of Central European democracies were the major experiences informing his analysis" (Hacohen, 1998, p. 711).

Although his rejection of Marxism was not a rejection of every part of Marx' thinking, Popper still held parts of it in regard, he rejected it in its essence (Faever, 1971, p. 13). For Popper, Marxism was not just a misguided ideology, but an idea which had caused untold suffering. Popper felt that the worker movements predilection towards interpretation and prediction rendered them passive and blamed them for their failure to resist fascism (Hacohen, 1998, p. 729). In essence, Popper saw Marxism as historicist and essentialist, a sort of appealing grand narrative which was constructed to be able to account for social phenomena but ultimately could only lead down the road of authoritarianism due the twin dangers of asserting that history developed according to certain rules and that these assertions were ultimately unfalsifiable (Faever, 1971, p. 7). The historical materialism of Marx was to Popper a dangerous idea and an unscientific one at that. Popper rejected what he saw as metaphysical accounts of the world, i.e. attempts at explaining what reality "really" (essentialism) is like. Marxism, to Popper, was therefore metaphysics and not science.

During his life in Austria Popper was also involved in discussions pertaining to philosophy of science. He critiqued the logical positivism of the "Vienna Circle", who despite his protests regarded his critiques as contributions to their philosophy (Hacohen, 1998, p. 713). While the context of the Circle might have "distorted" Popper's legacy, it nonetheless was a part of a milieu which proved formative for his thinking, both scientific and political. Indeed, as Hacohen writes: "Popper would spend much of his life refashioning progressive philosophy and politics" (Hacohen, 1998, p. 713, 719).

In 1937, only a year before Nazi Germany's annexation of Austria, Popper was able to emigrate to New Zealand to take up a post as lecturer at Canterbury University College. Here he would write perhaps his most famous work "The open society and its enemies", wherein he connects two facets of his thinking and champions a scientifically grounded liberalism, while simultaneously critiquing other popular ideological strains for a perceived lack of scientific merit, perhaps most notably Marxism (Maxwell, 2017, p. 10).

Having rejected what he saw as Marxism's promises of a coming and inevitable utopia, Popper consciously attempted to link his notion of falsifiability to his own version of an ideal society (Hacohen, 1998, p. 732). A society which he argued should not attempt

to create a grand social scheme from the ground up but rather enact incremental and reversible reforms on the basis of open debate. He saw this “open society” as the antithesis of various “historicist” conceptions, a term under which he placed Marxism, which through various “irrefutable laws” of social change promised to bring about maximal peace and prosperity. Popper saw this as equalling the dichotomy between falsification and verification, arguing that only attempting to negate specific ills was feasible, compared to more utopian schemes of attempting to promote well-being which in his mind ultimately would lead to political violence (Hacohen, 1998, p. 732).

The obvious and immediate context for this critique and its perceived importance was the ongoing socio-political conflicts between liberalism and socialism, as well as the ascendancy of fascist regimes throughout Europe, which not only involved tensions and conflicts between nations but was also felt on a national and local scale. Indeed, the conflicts between differing ideologies was so era-defining, all-consuming and polarising that the late historian Hobsbawm dubbed the period 1914-1991 “The Age of Extremes (Freedman, 1997).

Whereas some accounts of *fin-de-siecle* Vienna very much focused on its modernism and cultural crisis, Popper himself looked back on that time as a progressive, reform-oriented, and optimistic culture (Hacohen, 1998, 713). Indeed, Hacohen interprets Popper’s “passionate defence of the enlightenment and the open society” as “metamorphosis of progressive Vienna” (Hacohen, 1998, p. 719).

To summarize, Popper was one of the 20th century’s most influential writers, making significant contributions to both political liberalism as well as the philosophy of science. Popper’s life and work can be seen in the context of the culture of Vienna during its first three decades of the 20th century, and later in the context of the second world war and his life as an emigree in the post-war era.

1.2.2 Friedrich Engels

In this chapter I will outline the life and historical context of Friedrich Engels. I will argue that the influential conditions of his life and work were his experiences in Germany, perhaps most notably with the Young Hegelians, and later on his life in Victorian

England, both as a manager of his father's textile business and as an activist in the international labour movement.

Friedrich Engels was a German philosopher, businessman, political thinker, and activist perhaps most notable for his close relationship and collaboration with Karl Marx. Together, the two developed the ideology of *Marxism*. While this connection to Marx and Marxism is central to his life and legacy, Engels was an influential and prolific figure in his own right (Hunley, 1991, p. 18).

Born in 1820 in Wuppertal Germany to a wealthy family, he spent his life involved in various business and political affairs, writing numerous works on science, politics and philosophy while also aiding his father in running their textile company (Sen, 1970, p. 1975-76). His tenure as his father's liaison at the textile mill ironically provided both material and ideological support for the development of Marxist theory. Engels received at times handsome stipends for his work at the mill, some of which he spent in patronage to Marx. Not only did this capitalistic endeavour allow Engels to support Marx so that he could focus on writing his many texts on political economy, Engels' direct insights and experiences with the firm provided Marx material for the development of Marxism (Mata, 2017, p. 208).

Before emigrating to England at the age of 22, Engels had briefly grammar school, taken apprenticeship at a Bremen trading house, completed military service as an artilleryman in the Prussian army, and had become involved in a political and philosophical movement called the Young Hegelians (Hammen, 2021). The Young Hegelians were a group of radical students who supported democracy, criticised the clergy and rejected social conformity (Mavroudeas, 2020, p. 1).

Around the age of twenty, Engels would emigrate to England at his father's request. Engels' father had become suspicious that his business partner overseas was reallocating his capital to enrich himself, and so instructed his son to move in order to safeguard his investments (Mata, 2017, p. 211). Working at the textile company, Engels would be introduced to the dynamic world of industry and finance. He experienced stock trading, the buying and upkeep of machinery, in a word: the workings of the capitalist system. Furthermore, at the stock exchanges he observed

how capitalism spread all across the world, as he and Marx put it in their infamous manifesto:

“The need of a constantly expanding market for its products chases the bourgeoisie over the entire surface of the globe. It must nestle everywhere, settle everywhere, establish connexions everywhere.” (Marx, Marxists.org).

Not only did Engels derive great personal unhappiness from his time in the business, but he also observed the poor social and material conditions of the English working class. This experience led him to write his first major work, *The Condition of the Working Class in England*. In it he described the poor social and economic conditions of the Victorian industrial working class and argued that the working class and its real conditions should form the basis of socialist theory. He juxtaposed this with the “sentimental dreams” of other reform oriented socialist theories, a logic he would later expound upon in his famous work *Socialism, Utopian and Scientific* (Price, 2005).

Around the turn of the 18th century there had been many proposed socialist theories, with those of Fourier and Owen being perhaps among the most famous ones. According to Engels, the Owenites had stressed philosophical *materialism* in explaining social conditions, arguing that poverty was due to factors such as lack of education, equality, and opportunity, not moral or spiritual lack (Engels, Marxists.org, p. 47). In his work *Socialism: Utopian and Scientific*, Engels would write of these men:

Not one of them appears as a representative of the interests of that proletariat which historical development had, in the meantime, produced. Like the French philosophers, they do not claim to emancipate a particular class to begin with, but all humanity at once. Like them, they wish to bring in the kingdom of reason and eternal justice... (Engels, Marxists.org, p.38)

Engels perceived in the early socialism a lack of theoretical development, and this perceived lack was an impetus for his attempt at developing a “scientifically” grounded socialism. What this socialism ultimately would entail has been hotly debated in political and scholarly circles. In chapter 3.2 I will argue for an understanding of Engels theory, applying the term *Dialectical and Historical Materialism*.

For now, suffice it to say, Engels became deeply involved in the working-class movement during his time in England. Having grounded his socialism in the working class, “a real basis” as he put it (Engels, Marxists.org, p. 51), he sought to aid the development of an international communist, working-class movement. As we shall see in later chapters, a central component of Engels’ view of science compelled him to intervene into the proletarian movement with his notions of scientific socialism, as he viewed the theory itself as an indispensable tool for that very movement.

One of his avenues for such an intervention was the international workingmen’s association, more commonly known as the First International. Here, he played an important role in spreading core Marxist tenets, and in advancing the work of that very organisation (Sen, 1970. 1976).

England, then, was the context within which Engels operated. It was a two-fold life, consisting on the one hand of industry and revolutionary activity on the other. In the article *Capitalist Threads: Engels the businessman and Marx’s Capital* the author Mata writes of Engels’ life in England:

Between 1850 and 1870 Engels lead a double life (...) Engels held two addresses, one official to meet business partners and his family, the other where he lived with the Burns sisters (...) and kept company with exiled revolutionaries, hosting Marx on his occasional visits. (Mata, 2017, p. 207-8)

So, to summarize: In this chapter I have provided a background on Friedrich Engels’ life, historical context, and legacy. I have outlined three contexts, namely his life in Germany, his occupation at his father’s company in England, and finally his collaboration with Marx as well as his involvement with the labour movement. Furthermore, I have situated his life against the backdrop of industrialisation during the 1800s. This was a time of rapid change and at times great social unrest, owing to the development of modern industry, and I will analyse its impact on the development of Engels’ thinking in later chapters.

1.3 Outline

In this part of the introduction I am going to present an outline of the thesis to give an overview of the structure and content, while briefly touching on the themes contained within each chapter. The thesis will consist of seven chapters, including this introductory chapter. Each chapter in the thesis is structured with an introductory overview which explains the themes of that chapter, and any sub-chapter, and how I will go about dealing with those themes. At the end of each chapter I briefly summarize the chapter in its entirety.

In this chapter, "1. Introduction", I lay out and discuss my thesis with an emphasis on the thesis question and topics related to it as well as provide this outline of the subsequent chapters.

In "2. Methodology and Empirical Data" I present the theoretical and methodological framework through which I will conduct my analysis and argumentation as well guide and discuss my choice of empirical data as they pertain to answering the thesis question.

The third chapter, "3. Theory", is devoted to discussing and defining the theoretical frameworks which are fundamental to this thesis, i.e. those of Popper and Engels.

The fourth chapter, "4. Analysis", contains my analysis of and argumentation surrounding the presented empirical data through the lens discussed and defined in chapter 2 "Methodology and Empirical Data". I have identified several points which I will argue present novel, relevant and interesting points of comparison between the thinkers as well as my interpretation of these similarities. In essence I am using my chosen methodology to answer my thesis question and argue for my interpretation of the empirical data.

Next follows chapter five, "5. Conclusion", wherein I summarize my thesis up until that point. Here I discuss to what extent my thesis question has been answered and problematize the mode of explanation I have argued for.

In chapter six, "6. Further research", I lay out and discuss what further research could be needed on the themes this thesis has dealt with, both in general and as it specifically pertains to contributions towards the understanding I have attempted to further.

The final chapter, “7. List of references”, is a list of all the sources cited in the thesis.

1.4 Summary

So far, I have presented the themes and thesis question, and have presented the relevance, academic and otherwise, of my thesis. Furthermore I have given an overview of the structure, method, and argumentation.

The way I intend to research the thesis question is by first establishing a methodology, namely Quentin Skinners methodological contextualism. Having done that I will move on to choosing pertinent points of empirical data to conduct my comparison, in line with my chosen methodology. This empirical data should be suited for the role of being expressions of the ideas of the thinkers as it relates to their thinking on science, as well as establishing their intent and the context in which they were operating. Then there is the important aspect of outlining, defining, and discussing the relevant theoretical frameworks and how they relate to my research.

After having finished my selection and treatment of the empirical data and relevant theories I will proceed to analyse, discuss, and argue within the context of my chosen methodology. My argument is that there are similarities which have hitherto not been given sufficient treatment in the literature, a point which is made by Lahiri in the article I have discussed earlier. However, I also make the case that while a methodological contextualist analysis of the question indeed leads one to uncover some novel similarities, it still points to the case that their ideas are fundamentally dissimilar.

2. Methodology and Empirical Data

In this chapter I will lay out and discuss my chosen methodology as well as the empirical data I will be analysing, with each topic being treated in its own sub-chapter.

The first sub-chapter consists of a presentation and discussion of the methodology of Methodological Contextualism, a discussion which seeks to present the methodology itself and discuss the ways in which it impacts my thesis. Roughly speaking, these

areas of impact are the way it informs my analysis, argumentation as well as selection of sources.

In the second sub-chapter I present my empirical data, with a focus on two main sources. The data consists primarily of two works, Engels' *Dialectics of Nature* as well as Popper's *Knowledge and the Mind-Body Problem*. However, as historical context is central to my chosen methodology, I will also be drawing on other source material. Namely, other works by these two authors, as well as secondary literature such as scholarly articles in order to establish just such a context.

2.1 Method – Methodological Contextualism

I will now present my chosen methodology, Methodological Contextualism, as presented by Quentin Skinner in his work "Meaning and understanding in the history of ideas". In the article, Skinner argues that the meaning of some idea, or the oeuvre of some author, is not found solely in a text, but in an understanding of both historical context as well as how the meaning was intended to be taken (Skinner, 1969, p. 48).

As we shall see in this sub-chapter, Skinner argued that the question of meaning in the study of the history of ideas has a direct impact on one's methodology, this aspect is of course of relevance to this thesis. Crucially, he defended the assumptions of a methodological contextualist approach by critiquing what he called the two "orthodox" methodologies of his contemporaries while arguing in favour of his own approach.

Let us first consider Skinner's argumentation towards an understanding of establishing a procedure in historical research. In his work "Meaning and understanding in the history of ideas", Quentin Skinner asks the pertinent question:

"What are the appropriate procedures to adopt in the attempt to arrive at an understanding of the work?" (Skinner, 1969, preface).

In the article, which bear in mind was published in the late 60s, Skinner argued that there are in essence two "orthodox", i.e. academically popular, ways of conducting an analysis of a given historical work or some historical idea. The first, he says, argues that *context* is the ultimate determiner of the meaning of a given text, and so the job of

the historian is to provide an “ultimate framework” for that text in order to understand it*. The other *orthodoxy*, as Skinner puts it argued that the text in and of itself held the key to its understanding. Skinners own method, methodological contextualism, is his attempt to present a third option after a consideration of the shortcomings of what sort of methods would arise from the aforementioned theories (Skinner, 1969, p. 3-4).

Skinner starts off by critiquing the claim that texts are autonomous bearers of meaning. First, he argues that this methodology is closely connected to a specific *aim* in studying history, namely, to extract lessons from the texts itself. It follows from this reasoning that the reason for studying historical texts “must be to provide a reappraisal of the classic writings, (...) as perennially important attempts to set down universal propositions about political reality.” Skinner goes on to argue that from this justification again flows the assumption that it is *essential* for historians to focus on what each writer has said on these so-called “fundamental concepts” (Skinner, 1969, p. 3-4).

Skinner's fundamental disagreement with this methodology is that it is impossible to study such texts without interpreting it in familiar terms, thereby fundamentally altering what the author had intended to convey. While making his critique of this methodology and its associated propositions, he does concede that its shortcomings are not necessarily fundamental but are instead felt to the degree that such familiar but unapplicable terms and paradigms are unconsciously applied to the study of the past. In this critique he also lays out the essence of his own method, which he describes as such: “My procedure will be to uncover the extent to which the current historical study of ethical, political, religious, and other such ideas is contaminated by the unconscious application of paradigms whose familiarity to the historian disguises an essential inapplicability to the past.” (Skinner, 1969, p. 6-7).

According to Skinner, in addition to the aforementioned problems with the “classical” method, there are “mythologies” which are generated from the idea that “each classic writer (...) will be found to enunciate some doctrine on each of the topics regarded as constitutive of his subject” – in other word from the idea that a classic writer is expected to have presented a fully formed notion on a relevant subject.

This mythology might take the form of a historian taking fragmentary remarks and stitching them together to pass them off as the “doctrine” the author held on an

important theme. Skinner argues that this “generates two historical absurdities”, on the one hand allowing for an anachronistic “discovery” that a historical thinker had formulated a view on a subject which he could not and did not intend to contribute to (Skinner, 1969, p. 6-7). On the other hand, this mythology could lead one to consider an idea in itself as being an actually existing entity, and then attempting to show how authors throughout history have “touched upon it” before its actual emergence. In both instances one is applying a modern paradigm backwards into history, thereby distorting its intended and actual meaning (Skinner, 1969, p. 10).

Skinner goes on to note how the classical approach, leading to “reification of doctrine”, generates further historical absurdity. One such absurdity is that it might lead to a semantic debate over whether or not an idea has arrived fully formed at a historical point. There is also the attempt to search for “anticipations” of a given doctrine in earlier writers (Skinner, 1969, p. 11-12).

A further critique of the purely textual approach is that it leads to an unsatisfactory treatment of *coherence*. If authors are presupposed to have presented a coherent philosophical system, it might easily be considered proper “to discount the statements of intention which the author himself may have made about what he was doing” in order to preserve such an illusion of coherence, likewise, it might lead one to discount actual textual contradictions as simply not being contradictions. (Skinner, 1969, p. 18-19) To illustrate this point Skinner uses the example of Locke, where various parts of his writings are discarded and others emphasised to create a semblance of coherence, leading to the strange conclusion that “Locke at thirty is evidently not yet “Locke”” (Skinner, 1969, p. 18-19).

Already, I would argue that these arguments are highly relevant for this thesis. An attempt to define Engels’ and Popper’s theories could easily walk into these same pitfalls which Skinner identifies. A discussion of the application of Skinner’s methodology to this thesis is the subject of the next sub-chapter.

Next, we move on to Skinner’s critique of the other orthodoxy. This method, according to Skinner, consists of attempting to construct an ultimate framework which can give meaning to a text. Here, religious, political, and economic factors are argued to be the determining factors. Skinner points out how a purely contextualist reading might lead

one to overdetermine the effect on for historical context, overlooking an analysis of the intent and the actions of the author (Skinner, 1969, p. 6-7, 39). The historical context in this way becomes an explanatory factor behind the content of the text. Skinner does not, however, dismiss the importance of such historical context, pointing out that such knowledge is both helpful and indeed even superior to the purely textual methodology (Skinner, 1969, p. 39-40).

Finally, Skinner argues that although both previously discussed and criticised methodologies have fundamental flaws, that there still exists a methodology which is “more satisfactory” than others. Of his own view, he writes: “The understanding of texts (...) presupposes the grasp both of what they were intended to mean, and how this meaning was intended to be taken” (Skinner, 1969, p. 48). One must not view context as an ultimate determinant of what is being said, rather the historian must treat it as an “ultimate framework” which can help determine what meaning it in principle would have been possible for someone to intend to mean (Skinner, 1969, p. 49).

To summarize, methodological contextualism is a way of treating intellectual history by means analysing them in the context of their authors’ intentions and in its historical context. Such an analysis consists also of considering the “illocutionary” meaning of a text, i.e. what the author was “doing” by performing the text – viewing it as a “speech act”. When viewing texts in this way they become “recognizable historical acts”, instead of treatises on “perennial problems”. The historian then must understand each text not as a step in the lineage of an idea, but the attempt of a historical agent to grapple with problems which are ultimately tied to their own historical circumstance.

2.1.1 Applying Methodological Contextualism to the Thesis

In this part of the methodology chapter I discuss Methodological Contextualism and its bearing on my thesis. This discussion covers its impact on my source selection, treatment of relevant theoretical frameworks as well as my analysis and argumentation. However, a discussion and presentation of sources themselves is found in chapter 2.2 Empirical Data.

As I showed in the previous sub-chapter, Skinner argues that one’s premises in terms of how to understand the meaning of a historical text or thinker dictates the method

one chooses in order to study it from a historical perspective. Methodological contextualism is essentially a way of understanding ideas through taking into consideration the context in which they were developed in addition a consideration of authors' intentions.

If we are to compare the ideas of two thinkers on a given subject, we would need to first understand how to go about understanding their respective theories. As I have shown in the previous sub-chapter, there are several issues connected to such an endeavour. However, by applying methodological contextualism to the thesis we consciously attempt to understand the thinkers on their own terms.

When comparing the ideas of Popper and Engels, for example their ideas about falsification, it is not a question of assessing whether such a concept arrived fully formed or even found its roots in Engels, neither is it an attempt to trace some lineage of the idea, rather it is as Skinner says the attempts of historical actors to grapple with definite issues pertaining to their specific context. Rather, it is an attempt at arriving at an understanding of what the authors were intending to convey and do in their writing. Having arrived at this understanding, one can subsequently compare the two thinkers.

In essence, understanding authors on their own terms means that we require sources which allow us to grapple with the authors' context and intention. Furthermore, it is not up to the historian to attempt to form a holistic and non-contradicting "supra-historical" definition of their theories, Secondly, we require sources which deal with the authors' intentions. Bearing in mind that in a contextualist approach, this intention has a concrete impact on the meaning we draw out from the texts themselves. As such, this thesis should select sources, both primary and secondary, which deal with these intentions. Specifically, the political, ideological aims, and otherwise, of the two thinkers should be possible to establish through the selected sources. Again, works by the authors as well as academic articles must be selected.

Sources which establish and analyse the context of the two authors in question, as the bearing this context has had on the development of their ideas will also be crucial. Skinner points out how thinkers develop their ideas in dealing with problems which are pertinent to the context they operate within, and that these problems can only be understood as such. In other words, in order to establish the meaning of certain ideas

we must establish an understanding of the context within which the historical agents were operating. Here, source material covering both the authors experience of their context, as well as material covering the context more broadly is called for. I would argue that both the authors' own accounts of their context, as well as secondary literature which analyses the context and its impact on our authors are relevant to establish an understanding of these aforementioned factors.

The "Skinnerian" lens I would argue also allows for an understanding not only of "how" the ideas themselves are similar, but a deeper understanding of "why" these ideas developed as they did. We can approach a deeper understanding of the comparison by also analysing the similar and different contextualist factors at play in the development of the ideas of the two authors. In other words, a contextualist approach impacts analysis and argumentation profoundly.

It impacts analysis by first transforming the subject of the analysis - the ideas are rendered meaningful by their context – not just the textual. Then, it opens up the possibility for argument. By acknowledging the importance of historical agency, and the role historical context plays in the formation of ideas, one can start to analyse how these factors impacted a theory. For example, applying this methodology to the thesis allows me to argue not only how apparent textual similarities between the authors are actually different, or vice versa, but it allows me to argue for a specific interpretation of how they developed in this way. However, it must be stated that the argumentation is valid within the premises of the selected methodology - it is not a commentary on some absolute truth behind the meaning of historical ideas. This self-knowledge is a fundamental part methodological contextualism.

The impact of my chosen methodology on my analysis of the similarities and differences between Popper and Engels I hard to overstate. It determines how the thesis defines and relates to the theories of the subjects at hand, as well as the way in which analysis and argumentation is conducted.

2.2 Empirical Data

In the previous section I discusses Methodological Contextualism. I discussed its arguments concerning problematic issue of gaining an understanding of texts and the

overall theoretical views of any historical thinker. Skinner argued that ideas should not be understood in terms of fully formed theoretical frameworks, a methodology which would lead one to attempt to cover up or explain apparent contradictions in a body of work, but rather see texts in light of the intent of their authors as well as other factors which I have previously discussed.

In this section I will give a short presentation of one source for each of the authors and argue for why I think they are ideally suited to sources to aid in establishing an understanding of their thinking and theories, given the logic which Methodological Contextualism demands. However, when establishing both their theories I will be citing a broad range of materials, both primary and secondary, for the reasons I have discussed earlier in this chapter. So, while this chapter provides an overview into the sources and their relevancy, an in-depth discussion around the theories and the ways in which they relate to answering the thesis question will be conducted in chapters 3, 4 and 5.

2.2.1 Karl Popper and “Knowledge and the Body-Mind Problem”

One of the main sources this thesis relies on in establishing Popper’s ideas is a book called “the body-mind problem”, which is a collection of transcripts from lectures Popper gave at Emory University during the period of the late 50s to the early 70s. The book is the first in a two-series volume based on manuscripts from the Karl Popper Archives at Stanford University library (Chaim, 1998, p 1).

In the book he tackles various issues which are related to the question at hand, namely issues of ontology, epistemology, and his consideration of what a scientific outlook is. I will argue that the text is suited to gain an understanding of the opinions Popper intended to convey on the given topics.

The two-volume series *Body-Mind* is a part provides as one scholarly book review writes “a fascinating documentation of a philosophical oeuvre at its growth and expansion” (Chaim, 1998, p 1). This viewpoint I would argue strongly supports my claim that *Body-Mind* provides valuable insights into important aspects of Popper’s thinking. Interestingly enough, the book also contains the question-and-answer section which followed these lectures, wherein Popper answers questions from lecture

attendants regarding the material contained in the lectures. This section provides valuable reformulations, reflections, and additional context allowing us to further understand how Popper sought to make his thinking understood.

The book not only is a part of a series which can be said to contain documentation of Popper's work, but *Body-Mind* focuses in on one concept which is particularly relevant. In *Body-Mind* Popper expounds upon his "three-worlds" theory, an interesting theory which as we shall see played an important role in his overall philosophy, and whose role has been misunderstood.

In the article *Popper's World 3* the author Boyd quotes Popper as stating that the concept played an important role in the philosophy of his old age. This statement by Popper was mistranslated as it being "the philosophy of my (Popper's) old age", causing some to put it down as "the philosophy of his dotage". However, Boyd argues, pointing to the actual translation, that the World 3 theory "became a keystone of his thought (...) unifying and extending his ideas" (Boyd, 1998, p 2).

In Popper's case there are several well-known works, *Open Society* perhaps chief among them, wherein Popper formulates his views on the connections between science and politics more clearly than in *Mind-Body*. As has already been discussed earlier in this chapter, there will always be issues with attempting to form some holistic notion of the theories of one historical thinker based on a single work. However, as I have attempted to show, this work contains much that is valuable and relevant to the themes of ontology and epistemology which will be analysed in this thesis. Furthermore, as has been discussed in this chapter, this work has been seen as a presentation and unification by Popper.

To summarize, I have here presented *Knowledge and the Body-Mind Problem* and have argued for its suitability in establishing an understanding of relevant aspects of Popper's theory. In chapter 3.1, this thesis will utilize this work as well as other sources to argue for a specific definition and understanding of Popper's theory, which later can serve as a basis for analysis, discussion, and comparison in order to answer the thesis question.

2.2.2 Friedrich Engels and “The Dialectics of Nature”

One of the sources I have chosen to give an understanding of the thoughts and ideas of Friedrich Engels is the posthumously published *The Dialectics of Nature*. In this chapter I will present the work and argue that this work is well-suited to establish an understanding of components of Engels’ theory which are highly relevant to the answering the thesis question. These components are Engels’ views on subjects of ontology, epistemology and broadly speaking his philosophy of science. In determining the meaning of this text, we must analyse it as a speech act, attempting to determine what Engels’ intention could have been in writing it.

In the book *Friedrich Engels and the Dialectics of Nature* the author Kangal argues that Engels’ intention in writing *Dialectics* was essentially four-fold. First, it was his intention to intervene in the socialist movement against what he saw as a reliance on unacknowledged philosophical theories. Here, the goal for Engels was to provide a “self-conscious theory” that could “win over all potentially progressive forces, including natural scientists, to the socialist cause,” (Kangal, 2020, p. 111-113). As Engels put it: “Materialist dialectics... our best working tool and our sharpest weapon.” (Kangal, 2020, p. 127)

Secondly, Engels was writing in a context where he was attempting to rebut “an anti-philosophical” trend common among natural scientists at the time. Engels was of the opinion that science could never escape philosophy, and that those who attempted to distance themselves from this dilemma were simply unconsciously embracing some philosophy or other. For Engels, a self-conscious philosophy of science was better than “ignoring it or cursing at it” as an attempt to escape the fact. ,” (Kangal, 2020, p. 112) .

The third intention which Kangal identifies is the Engels’ attempt to counter the dominant philosophy of the time, the “old metaphysical mode of thinking” or, what he less charitably dubbed, the “narrow-minded philistine mode of thinking”. The alternative, Marxist materialism, was Engels’ attempt to create a “philosophical outlook” which could account for and adjust in response to empirical laws. ,” (Kangal, 2020, p. 112-113).

Lastly, it was a reworking of Hegel’s dialectics into a material mode of thinking. Where earlier Engels had entered into discourse with philosophers such as Feuerbach who

attempted to undo the whole of Hegel's idealism, he now sought to "critically overcome it" instead by conforming dialectics with the form of development found in nature (Kangal, 2020, p. 113).

I have here argued for an interpretation of the work which bases itself on an analysis of the way in which Engels intended to make his ideas understood. This analysis of the work will become relevant in chapter 3.2, where I will utilize the work to understand Friedrich Engels' thinking on the theory of science. As we have seen, *Dialectics of Nature* is Engels' self-conscious attempt at delineating just such a theory, furthermore we have also seen what his intention was in doing so.

2.3 Summary

To summarize, I have presented my methodology and how it has impacted my use and selection of source material. I have chosen two works for my analysis which I have argued are well-suited as they both represent the authors' formulation of their thinking on scientific issues which are central to my research i.e. their thinking on the nature of science and scientific method. Furthermore, these sources allow me to present an analysis in line with my chosen methodology.

Both contain elements which I will argue allows for novel comparisons, showing how the ideas of both authors relate to each other in new and meaningful ways. In addition, since Methodological Contextualism calls for an analysis of speech acts in their historical context, I will also draw on various other sources – such as academic articles as well as other works by the authors in question.

3. Theory

"Always remember that it is impossible to speak in such a way that you cannot be misunderstood: there will always be some who misunderstand you."

— Karl Popper (Popper, 2005, p. 29).

In this chapter I will lay out and discuss the theories of Karl Popper and Friedrich Engels. I will define and discuss these issues utilising the methodology and the types of empirical sources which have been discussed in the previous chapter. The way I will go about dealing with these issues is by sub-dividing this chapter into three parts, wherein the first two deal with Popper and Engels' theories respectively. The third sub-chapter summarizes the previous ones.

For the first two subchapters, which deal with theories of the two relevant authors, it is a matter of using the primary source material as well as academic literature to establish, using methodological contextualism, the boundaries and content of each author's theoretical views on science and its connection to politics. I.e. to research the meaning of source material as Speech Acts by way of including their context and intent.

To summarize, this thesis attempts to understand and make meaningful the relevant historical ideas by grasping the meaning that their originators intended to convey in their historical context by drawing on previous research as well as primary source material.

3.1 Popper's Critical Rationalism

"I am quite ready to admit that there is a method which might be described as "the one method of philosophy"."

— Karl Popper (Popper, 1968, p. 16).

In this chapter I will examine Popper's philosophy of science. First, I will discuss the ways in which his work has been understood. Then, connecting it to how Popper himself sought to make his ideas understood, I will argue that the term "Critical Rationalism" is a suited and useful description of Popper's scientific theoretical framework. Finally, to give a description Critical Rationalism I will rely on academic literature as well as Popper's work *Knowledge and the Mind-Body Problem*.

Popper's thinking on science and scientific method has been influential in modern science, as well as in the social and political sphere. His thinking spans some of the most turbulent decades in recent history, from the interwar period to the late cold war, and in this time his thinking evolved considerably. In the article *Karl Popper, the Vienna*

Circle, and Red Vienna the author Hacohen writes that Popper has been seen as an “Atlantic intellectual and an anti-communist prophet of postwar liberalism”, and that his philosophy of science has been debated within the context of the Vienna Circle (Hacohen, 1998. p. 711).

Here it is important to disentangle Popper from these contexts in order to arrive at a methodological contextualist understanding of his philosophy of science. Hacohen points out how Popper’s reliance on the Vienna Circle, a group of philosophers, for publishing his works has meant that “future discussions of his philosophy of science would be largely confined to the Circle’s legacy” (Hacohen, 1998, p. 713).

Popper himself however, identified himself with a strain of philosophy he developed, which he called Critical Rationalism. In the paper *Karl Popper, critical rationalism, and the Positivist Dispute* it is described as consisting of three essential criteria, with an additional fourth criterion. These are “consistent fallibilism”, a tenet which emphasises the fundamental fallibility of humans. This fallibility concerns both an aspect of cognition and the fallibility of problem-solving. The second hallmark is *critical realism* is “the assumption that we are able, in principle, to recognise real connections that are independent from us, that is, to arrive at true statements about these”. The third is *methodological revisionism*, which is the assumption that all statements are open to revision. The additional criterion is a *correspondence theory of truth*, i.e an embrace of classical logic and deductive reasoning, as well as a rejection of induction and the “dogmatisation of problem solutions” (Albert, 2015, p. 210).

Furthermore, Popper himself saw his development as being related not as much to any one field of philosophy, but rather the connections he made between them into a whole. On this Popper remarked: My theory of knowledge, my philosophy of science and my political philosophy are original only in their interdependence (Hacohen, 1998, p. 712). The heart of that philosophy is “characterized by an emphasis on an overarching attitude of doubt and problem-solving.” (Chaim, 1998, p 1). Popper described science as in its essence being common sense combined with critical thinking (Hacohen, 1998, p. 712).

Critical Rationalism then, as Popper intended, is a philosophy which stresses trial and error, revision, and doubt. In Popper’s mind there existed a close connection between

this mode of thinking and his conception of an ideal society (Albert, 2015, p. 216). This connection is reflected for example in the name of an article written on his view of piecemeal social engineering, namely *The Society Most Conducive to Problem Solving*. In said article the author justifies this title by describing how Popper's emphasis on problem-solving is the departure point and the logic behind his support for an *Open Society*. An Open Society is in Popper's mind the ideal form for promoting human flourishing: Self-consciously modest and critical, an Open Society ensures that theoretically reversible suggestions for reforms can be put forth freely, enacted and then carefully reviewed (Gladish, 2019, p. 381).

While Karl Popper is famous for his falsification principle, perhaps lesser known is his view of ontology, i.e. his thoughts about the nature of reality. As mentioned earlier, Popper formulated a "three-worlds" theory which he came to view as a cornerstone of his thinking, drawing together more disparate aspects of his philosophy of science. Here we turn to his *Body-Mind*. In the book, Popper states that this theory is crucial to his attempt at answering one central question in philosophy, namely the relation of the body to the mind (Popper, 1994, Author's Note).

Ontology is a central aspect of the philosophy of science, and one where, as I will argue in later chapters, Popper diverges significantly from Engels. Ontology spans many issues, but some central ones are the questions of whether or not reality has several constituent parts or only one, and whether or not mind or matter are separate things. A monist ascribes to the notion that there is one "substance", whereas a dualist asserts that there are two, and so on. Then, there is the question of whether mental states and physical states are separate or not. Popper's "three worlds" theory is Popper's attempt at staking out a sort of "third position", wherein he accepts the existence of both mental and physical states and argues that reality consists of three differentiated spheres (Boyd, 2016, p. 3).

These worlds are: World 1, the world of physical states, world 2 is comprised of mental states or processes, and world 3 consists of "the products of our human minds" (Popper, 1994 p. 4-5). Now, Popper states in *Body-Mind* that this concept "an unusual and a very difficult idea" (Popper, 1994, p. 6). He was seemingly conscious of the fact that his idea would be difficult to grasp. How can we then understand how he intended it to be understood?

It seems that he didn't necessarily intend it to be taken as a "literal" three-world interpretation, but more something akin to a "theory of theories". In other words, almost a way of conceptualising how reality fits together instead of a pure description of reality. According to Boyd, the three-worlds theory was meant as a sort of "theory of theories" (Boyd, 2016, p. 5). Indeed, in *Body-Mind*, Popper clarifies his intention, stating for that the name "world 3" is a *metaphor* (Popper, 1994, p. 25). This seemingly fits with what I have argued is Popper's overall intention, namely, to convey an attitude of pragmatic rationality.

His three-worlds theory allowed him to explain how different aspects of reality interacted with each other, especially how "ideas" fit into the picture. Popper wished to stress the relative independence of ideas, almost in a platonic sense (Boyd, 2016, p. 6). We see then the way Popper weaves together the different strands of his philosophy, connecting epistemology, ontology, sociology, and ethics among other things. He wishes to convey, as I have argued, that ideas really make their presence felt in the world. From a methodological contextualist point of view we can argue that the way he goes about attempting to convey his points informs our understanding of his ideas. He is careful not to make clear announcements, but rather in an iterative and sceptical manner attempts to communicate a sense of tentativeness and practicality.

Popper's writings have been influential in several philosophical and political discourses and modes of thought and have been interpreted in various ways. From a methodological contextualist point of view, however, I would argue that the Critical Rationalist definition works well.

3.1.1 Popper's Intent

In this chapter I will give a short overview of Popper's intent, which will aid in the analysis of his works in later chapters. The essential question I am attempting to answer here is: What was Popper attempting to accomplish in his writings on the science of philosophy? I will argue that he sought not only to construct a philosophy of science "for the sake of it", but that he intended to propose a liberal and scientific solution and explanation to the rise communist and fascist dictatorship.

Popper himself describes the way in which a concrete incident led to a dramatic reappraisal of the Marxist convictions of his youth. A violent incident involving workers and police forced Popper to consider more deeply, in his own words, whether or not Marxism as a theory was legitimate. It had become obvious to Popper that the problem with Marxism was its ability to seemingly explain everything, which in turn made it impossible to test whether or not the theory was true. There could be no proposed test which Marxism could theoretically fail, and this in Popper's mind made it unscientific.

The Marxist mode or model of explanation had on the face of it a laudable goal, but the very fact that such a theory could account for any outcome meant that it could be pursued without care or caution. An unshakeable belief that truth is on one's side could lead to horrible outcomes, as any means could be justified. Indeed, I would argue that one of Popper's intentions in writing his philosophy of science was to construct a theory which could counter such nefarious beliefs. Popper argued that his conception of science which placed an emphasis on experiment and revisiting ones conclusions critically as a way to navigate an ultimate unknowability universe, would lead to a more gradual and reasonable approach to solving societal problems.

In the article *Popper and Marxism* the author Faever writes:

"It was (...) in witnessing the horrible political excesses of the first half of the twentieth century that Popper's commitment to the values of liberal humanism were forged" (Faever, 1971, p. 7).

Popper wrote *The Poverty of Historicism* as a direct attempt at solving the issues presented by the totalitarian ideologies. The attempt at making a science of sociology was based in the belief that the universe and society were ultimately *knowable* entities, a belief which lead in Popper's mind to that disastrous confidence which the totalitarian ideologies displayed in pursuing their "Historical Laws". Here we see the deep connection between his intention and the development of his idea, namely, to put forth a model of science which was fundamentally sceptical and acknowledged the impossibility of making a science of sociology.

To summarize, I have argued that Popper put forth a philosophy of science characterized by an overarching attitude of doubt and revision which also self-consciously embraced human fallibility. He sought to intervene against the totalitarians,

who he argued had as the base of their politics a confident philosophy of science. His view of an inextricably complex social order is echoed in the careful and pragmatic way he describes his philosophy.

3.2 Engels' Dialectical Materialism

In this part of the theory chapter I will argue for a specific understanding of Engels' thinking, a definition I will be calling Dialectical and Historical Materialism. This issue of defining Engels' thinking is, perhaps more than most other thinkers, fraught with potential dangers – seeing as his thinking has been so identified with Marxism, and how his thinking has influenced and been interpreted by a myriad of thinkers and political figures such as Lenin who themselves are, to put it mildly, controversial. In fact, some have argued that Engels' ideas, even more so than Marx', are responsible for the totalitarian features of the Leninist dictatorships of the 20th century (Hunley, 1991, p. 1-2).

Thus, it becomes important to identify and deal with these various issues, while also arguing for a definition which is useful in answering the thesis question and which springs forth from this thesis' contextualist approach. In order to deal with these aforementioned issues this chapter will be structured around the two following questions:

1. To what extent is Marxism compatible with Engels' thinking?

This question also concerns itself with the relationship between Marx and Engels' thinking, and in answering this question I will also discuss why this thesis has refrained from using the term Marxism instead of *Dialectical and Historical Materialism*.

2. Does a contextualist approach support a *Dialectical and Historical Materialism* reading of Engels' theory of science?

This question concerns itself with the definition of Engels' theory of science which I will be applying in this thesis. In answering this question I will also discuss why a definition other than the materialist one, such as for example an "Engelsism" would be ill suited given my chosen methodology.

3.2.1 To What Extent is the Term Marxism Compatible with Engels' Thinking?

In this subchapter I discuss the relationship between Engels and Marxism. I discuss the nature of Engels' contribution to the ideology, and whether or not Marxism and Engels' thinking are compatible. I will argue that Engels was an important contributor to the ideology, and that there is little or no contradiction between Marxism and Engels' thinking. In order to answer these questions I will first discuss Engels' relation to Marxism, analysing his contribution to it as well as the in which his role in its development has been understood. Then I will discuss the degree to which they are compatible.

First, let us analyse Engels' relation to Marxism. There are many ways in which Engels' relation to Marx and Marxism has been conceptualised. I have identified three such conceptions which I will discuss in this chapter. One view is that Engels' chief contribution to Marxism was keeping Marx from financial ruin with the money he earned as manager of his father's mill. In this view, Engels supplied Marx an income so he could spend his days thinking, writing, and pouring over texts in the reading room at the British library. However, far from a "mere benefactor", I would argue that Engels was an important collaborator to Marx as well as an astute thinker and political actor in his own right, as I will argue in this chapter.

Another view of Engels is perhaps even less charitable, accusing Engels of distorting Marx' thinking after his death and infusing Marxism with his own brand of authoritarian thinking and muddled philosophy (Mavroudeas, 2020, p. 2-3). The third and last view is that Marx and Engels were mostly in agreement on the bigger picture definition of Marxism, and that Engels was an important contributor and collaborator in the development and popularisation of the ideology. This is the view which I will argue in support of in this thesis.

The view that Engels made no significant theoretical or political contributions to Marxism is readily dismissed. Not only did Engels contribute to the theory, but he also systematized it and "transformed it to a mass political movement" (Mavroudeas, 2020, p. 4). Now I will discuss the notion that Engels was a distorter of Marxism. The paper *Friedrich Engels and his Contribution to Marxism* details how scholars in the 1970s

and 80s launched attacks against Engels, arguing he had philosophically and methodologically misrepresented Marx. It was claimed that Engels had made Marx dialectics and free spirit into a mechanistic and standardised system through his editorship of Marx' posthumous publications and through his promotion of political Marxism. However, the paper argues that in the ensuing debate it was showed that Marx and Engels were commensurate.

In the article *The Intellectual Compatibility of Marx and Engels* the Hunley argues that the methodology of those who insist upon the dichotomy between Marx and Engels consisted of selectively reading both men. By ignoring instances where Marx spoke of natural laws operating in history, they insist on a humanist reading of Marx, and then doing the reverse for Engels. And, in doing so, they distorted the authorship of both men. Hunley points out that such a view cannot be supported by an understanding of the works and the intentions of Marx and Engels themselves, pointing to for example Marx' view that Engels was his "alter ego" (Hunley, 1991, p. 17). Hunley not only argues against the supposed dichotomy between the two men, but by dispelling this idea supports their mutual compatibility.

I have now argued against the idea that Engels is either at odds with or not a significant contributor to Marxism, and in doing so have also attempted to show the mutual compatibility of the two men and the ideology of Marxism. In the following subchapter I will argue that while Engels' thinking has significant overlap with the term Marxism, and that Engels himself saw his thinking as being at its core compatible with this term, the term lacks a certain clarity due to the breadth of the term as well as its many connotations. Furthermore, I will argue that Engels himself preferred to use the term dialectical and historical materialism for the purposes of promoting his view on the science of philosophy.

3.2.2 Does a Methodological Contextualist Approach Support a Dialectical Materialism Reading of Engels' Theory of Science?

In the previous subchapter I argued that Engels considered Dialectical and Historical materialism the philosophical underpinning of Marxism. There does not necessarily exist, then, a contradiction between the two terms. This raises the question of whether

or not it, or indeed a different term altogether, could be a fitting term to apply in my comparison of Popper and Engels.

In this subchapter I build on the analysis of the work *The Dialectics of Nature* carried out in chapter in order to both establish support for using the term *Dialectical and Historical Materialism* as well as give an account of the content of the term. In order to do so I will argue that this term suits Engels' intention, and then, analyse the way in which Engels sought to make his ideas understood. However, in order to argue for this position I will first discuss the alternatives, namely whether Marxism or a different alternative than dialectical and historical materialism is more suited given the methodology and topic of this thesis.

Marxism obviously gets its name from Karl Marx. Could one then conceive of an "Engelsism"? Perhaps such a term could be useful and suitable when discussing the philosophical ideas of Engels. I will however argue that a methodological contextualist approach shows that such an approach, while perhaps alluring in its apparent simplicity, is in fact not sustainable.

In my analysis of Engels' work *The Dialectics of Nature* I argued that Engels' intent in writing the work was in essence to promote a "theory of theories" which could serve several distinct purposes. In analysing his intent it becomes clear that the term "Engelsism" would significantly alter the meaning which Engels intended to convey with his utterances.

Engels' activities in the First International corroborates this line of argument. One of the issues which Engels and his collaborator Marx faced was keeping the organisation together despite the ideological differences which threatened to, and eventually did, break it down. Engels *could* conceivably have made utterances to the effect of promoting the term "Engelsism", but seeing as he did not, we must from a methodological contextualist point of view take note of that fact. It would seem that such a "Speech Act" would have been quite counterproductive to the efforts of Engels in the First International.

Both Marx and Engels had an ambiguous relationship to the term Marxism, and both spoke of scientific socialism, historical materialism, or other related terms. Now imagine, had Engels pushed the term "Engelsism" would it not have made it more

difficult to advance the work of the First International? I argue that it would, both in connection to their organisational work – keeping it from tearing at the seams – and in terms of actually advancing their own theories within the organisation. This latter intent, the role of a scientific socialist theory for working class organisations, was one which Engels frequently stressed the importance of.

Thus, I would argue that the term “Engelsism” is ill-suited given the methodology this thesis has adopted. Likewise, it seems that such a term, or any other neologism created for the sole purpose of abstractly defining from purely textual readings the “essence” of Engels’ thinking would quickly run into the problem of actually altering the meaning of Engels’ ideas. I would argue that applying such terms would miss the point of what Engels was trying to *do* and trying to convey with his utterances.

Having now argued against this class of terms, let us consider whether Marxism could be applied instead. As mentioned earlier, Engels did not consider Marxism much different from his own thinking, but there are still two aspects which I would argue makes this term less suitable for answering the thesis question than *dialectical and historical materialism*.

In the footnotes of the work *Thesis on Feuerbach*, Engels himself wrote:

I cannot deny, that both before and during my forty years’ collaboration with Marx, I had a certain independent share in laying the foundations, and more particularly in elaborating the theory (*i.e.*, of dialectical or ‘historical’ materialism). Put the greater part of its leading basic principles, particularly in the realm of economics and history, and above all its final clear formulation, belongs to Marx. (...) It therefore rightly bears his name. (Jackson, Marxists.org)

From this we can gather that Engels saw himself as a significant contributor to Marxism, albeit a junior one to Marx’ genius. It is also interesting to note in which fields Engels ranks Marx as particularly superior, namely in the fields of economics and history. This quote not only corroborates the analysis done in the previous chapter, it provides us with a very pertinent quote. Consider this extract from the previous quote:

“I had a certain independent share in laying the foundations, and more particularly in elaborating the theory (*i.e.*, of dialectical or ‘historical’ materialism)”

Here we can see that Engels, while lauding the Marxist theory in general, identifies his thinking in particular with that of dialectical or historical materialism. It is along this line of thinking that I wish to argue for the application of dialectical and historical materialism the term I will apply to Engels' thesis in the context of this thesis.

The first reason is the fact that, as previously discussed, Marxism is a broader term and one which also brings with it the potential for analytical confusion. I have shown how Engels was also aware of how Marxism already in his time had come to take on a life of its own, and how he more often than not avoided the term in favour of the alternative. The second reason is as I've already hinted at here, that Engels himself favoured the term, especially when expounding upon scientific philosophy. And so, for much these two reasons I would argue that the *dialectical and historical materialism* term is more suitable.

Now that I have argued for the use of the term in this thesis, I will now explain the theory itself. First, I will discuss its use in general, and then argue for a specific definition by analysing how Engels sought to make his theory understood in his *Dialectics of Nature*.

Dialectical Materialism is in many ways a contradictory philosophy of science; indeed, contradiction is at the heart of it. This is not only due to the emphasis it puts on the concept of contradiction, as we shall see later in this analysis, but also in the ways it has been understood by various contributors to its development throughout history.

Furthermore, as the scholar David Schwartzman points out, important Marxists such as Althusser and Gramsci have disagreed on the fundamental aspects of materialist dialectics. In his paper "Althusser, Dialectical Materialism and the Philosophy of Science» Schwartzman writes how Althusser emphasised the materialist aspect, whereas Gramsci from time to time infused it with borderline idealist aspects (Schwartzman p. 319-320). Furthermore, prominent, and infamous Marxists like Lenin and Stalin both wrote works which expounded upon dialectics, often referring to Engels' writings in particular. Lenin's "Materialism and Empirio-Criticism" and Stalin's "Dialectical and Historical Materialism" both grappled with these themes.

However, as I showed in chapter 2.2, we must attempt to understand Engels' theory not by grappling with later additions and interpretations, but rather peel back the layers

and attempt to form an understanding which is commensurate with Engels' own intention and utterances. Having already analysed his work *Dialectics of Nature* such lines, I will now give an accounting of Engels' theory which I will term "Dialectical and Historical Materialism".

The scholar Schwartzman writes:

«Engels defined dialectics as the most general laws of nature and human society as well as thought itself» (Schwartzman p. 321).

We see here then that materialist dialectic is an attempt by Engels to formulate laws which he argues can be found in nature. It was in this sense that Marx and Engels famously "stood Hegel's dialectic on its head", a phrase which refers to their view that instead of Hegel's view that nature itself followed a dialectical logic, Engels' dialectical logic was instead founded in the workings of nature. What, then, are these "dialectical laws"? Engels' laws essentially describe, in a general fashion, motion, development, and interaction. In other words, the dialectical part of Engels' Dialectical Materialism describe how *matter* operates.

Turning to the other term mentioned in this theory, Engels' *Materialism* is his fundamental view on what reality "is". Throughout his *Dialectics of Nature*, Engels is not only arguing for these dialectical laws and their relation to how nature operates, is arguing that there all of nature is made up of only one "substance", and that this substance is matter. He juxtaposes this view to the view that there are other substances, or philosophical idealism which argues that matter does in fact not exist. For example, Engels argues against non-materially constituted "spirits" and Gods, which go against his materialist philosophy. But on a more subtle level Engels is essentially arguing that thoughts, ideas, and consciousness are not real things in and of themselves but find their ultimate origin in matter. In the article "Engels as an Ontological Materialism" the author Joseph Ferraro quotes Engels as writing the following: "matter is the ultimate constituent of the universe, and ... there is nothing else in the world: to be is to be material." (Ferraro, 1989, p. 134). For Engels, then, the world was fundamentally and only *matter*. This matter, according to Engels, "really existed".

This is the part of his materialist philosophy which sets him at odds with Popper, who as we have seen argued that ideas were in fact real and could not in a simple sense find their origin in the material world. While Popper did not argue against an actually existing world, like a philosophical idealist would, he did view ideas as having a high degree of autonomy from that world. This view of Engels and Marx that matter, “in the final analysis”, is the origin of all observable phenomena, leads Popper to reject Marxist ontology. Popper argues that the fatal flaw of materialism, which he also calls physicalism, is to be found in its supposed inability to account for mental states. In chapters 4.1 and 4.2 I will further discuss and compare their thinking on these issues.

Engels, however, counterbalances his materialism with dialectics, hence “Dialectical Materialism”. Engels argued that if matter was the substance of reality, dialectics described how this “thing” works or operates. As we shall see, this meant that Engels rejected the notion that materialism must imply that the universe operated deterministically and mechanically, and that mental states could not in some sense exist or impact the real world.

Engels laid out the dialectical laws or principles in his work «dialectics of nature», they are as follows:

1. the laws of the transformation of quantity into quality.
2. the interpenetration of opposites.
3. the negation of the negation.

These three laws in a sense mirror the three laws of logical thought, namely the law of identity, non-contradiction, and the law of the excluded middle, which were developed by Plato, among others, and was also embraced to an extent by thinkers such as Popper. Indeed, Engels himself wrote of this similarity in his *Anti-Dühring*, discussing the extent to which they were comparable:

Formal logic is primarily a method of arriving at new results, of advancing from the known to the unknown – and dialectics is the same, only much more eminently so; moreover, since it forces its way beyond the narrow horizon of formal logic, it contains the germ of a more comprehensive view of the world. (Engels, 1947, p. 83)

As we have seen earlier, Engels is here expressing the view that dialectics is a method of understanding the world – similar to formal. But Engels also criticised formal logic, not in its entirety, but focused on its “narrow” nature. We shall now see how Engels explains his materialist dialectic.

In his *Dialectics of Nature* that the book isn't intended as a handbook on dialectics and so only expounds upon the first law, writing:

The law of the transformation of quantity into quality and vice versa. For our purpose, we could express this by saying that in nature, in a manner exactly fixed for each individual case, qualitative changes can only occur by the quantitative addition or subtraction of matter or motion (so-called energy). (Engels, 1925, p. 19)

This law has been connected to the scientific idea of “phase change” wherein water, for any given pressure, has a “fixed” point wherein a quantitative increase or decrease in energy transforms it into another state, for example turning it from water to ice.

For an explanation of the latter two he simply refers to Hegel, although with the caveat that these appear in Hegel as “mere laws of thought (...) foisted on nature and history (...) and not deduced from them” (dialectics of nature). Engels, again, seeks to convey that the way in which Hegel describes dialectics is in a sense useful, but only as it applies to the description of an observed material nature. A more in-depth explanation of these two laws can be found in Engels' “Anti-Dühring”. The “negation of the negation” he explains by the example of a butterfly, which dies (i.e. is “negated”), but through its production of offspring “negates its own negation”. He writes:

Butterflies, for example, spring from the egg by a negation of the egg, pass through certain transformations until they reach sexual maturity, pair and are in turn negated, dying as soon as the pairing process has been completed and the female has laid its numerous eggs. (Engels, 1947, p. 84)

On the “law of the interpenetration of opposites” Engels describes how things in nature are not, contrary to in formal logic, in fact not equal only to themselves. In formal logic one of the central rules is the law of identity, which asserts that “A=A”. In its application this law of identity would assume that a human being for example is equal to

themselves. Engels, however, argues that this is *metaphysics* (Engels, 1947, p. 13). In *Anti-Dühring* he makes it clear that while formal logic is useful, it does not actually describe the way nature operates. In his attempt to root his dialectic in observations of nature he notes that: Every organic being is every moment the same and not the same, every moment it assimilates matter supplied from without, and gets rid of other matter; every moment some cells of its body die and others build themselves anew (Engels, 1947, p. 14). Engels is arguing that an actual investigation of nature reveals that things when closely investigated are revealed to contain things that are “not them”. Nature is according to Engels, in other words, contradictory. There are no fixed boundaries between things in nature, and formal logic’s insistence on the fact constitutes and attempt to thread an idea over nature’s head.

To summarize, in this sub-chapter I have argued that the term Dialectical and historical materialism is a meaningful term in a methodological contextualist analysis. In essence, dialectical materialism is a philosophy of science which rests on *materialism* on the one hand and *dialectics* on the other. Engels argued that these laws were deduced from observations of nature. I have pointed to Engels’ use of the term, and his intention, to support this reading. I have attempted to show how Engels used the term as a “Speech Act”, showing how his intention was to communicate a particular theory of science for the purposes of intervening in his historical context. Building on this analysis I have argued that Engels saw his theory as not so much a theory of science onto itself, but rather a systematic description of the ways nature, human society and thought can best be understood for the twin purposes of science and action.

3.2.3 Engels’ Intent and Context

In this subchapter I will briefly discuss Engels’ context and intention. The point of this discussion is mainly to establish an understanding of Engels’ intention behind his writing because an understanding of what Engels attempted to do with his writings informs, via a methodological contextualist lens, our understanding of his theory. I will argue that Engels sought to intervene not only on the side of the labour movement but intervene against currents within the labour movement which he considered unscientific.

Let us examine more closely Engels' intention in his writings on the philosophy of science by analysing a quote from *Socialism: Utopian and Scientific*. In the following quote, Engels refers to "scientific socialism", but as we have seen earlier in the analysis, he sought to construct a "scientific socialism" on the basis of his dialectical materialism. Engels writes on the topic of proletarian revolution:

To accomplish this act of universal emancipation is the historical mission of the modern proletariat. To thoroughly comprehend the historical conditions and this the very nature of this act, to impart to the now oppressed proletarian class a full knowledge of the conditions and of the meaning of the momentous act it is called upon to accomplish, this is the task of the theoretical expression of the proletarian movement, scientific Socialism. (Engels, 1970, p. 83)

Just like we have already seen in Popper, there is a sense of world historical scale in Engels' conception of his own speech acts. Indeed, here Engels is directly positing that his conception of science, infused into socialism and the proletarian movement, will help accomplish an "act of universal emancipation". Again and again we see the relationship between his writings and the specific problems he was grappling with. Engels identifies in the quote the proletariat as a class with a, as he puts it, "historical mission", and seeks to root his philosophical theory in the experiences of that class.

Here it might be interesting to note how even Popper "excuses" this historicist impulse in Marxism, implying that such a position would have seemed more tenable in the context within which Marx (and Engels) were operating in (Faever, 1971, p. 14). Indeed, this almost methodological contextualist argument is similar to the one I am here proposing, namely that Engels' experience in Victorian England and the broader context of industrialisation lead him to develop his dialectical materialism. His view of the class nature of society, as well as his identification of the industrial working class as the progressive force in society led him to develop a theory of science which he intended to be a tool for that class and its allies.

3.3 Summary

In this chapter I have applied methodological contextualism to discuss issues related to finding suitable terms for the thinking of the two thinkers and argued for a specific

understanding of their theories. I argue that I have shown that Critical Rationalism and Dialectical and Historical Materialism are suitable terms for the parts of Popper and Engels' thinking respectively which are relevant to this thesis. I argue that my analysis is appropriate as they represent the ways in which the thinkers sought to make themselves understood.

4. Analysis

Having already argued for an understanding of their ideas which takes into consideration methodological contextualist factors, I will build on this understanding to compare and analyse the scientific ideas of Popper and Engels. This analysis will take the form of several points of comparison on issues which I have argued are central to their philosophies of science. I argue that my analysis reveals some novel and significant similarities between the two authors and rooting this argumentation in what I argue are parallel intentions and context behind their speech acts. However, I argue that just such an analysis reveals that their ideas are fundamentally dissimilar and incompatible, due to precisely this "parallelism".

The first sub-chapter analyses and compares their ideas on knowledge justification, i.e. their views on what should be considered scientific ways of coming to knowledge of the world. Briefly put, this discussion is centred around their views on the role of induction and falsification. The second sub-chapter is devoted to analysing and comparing their view on what is to be considered a scientific understanding of what reality *is*, i.e. analysing their thinking on ontology. The third chapter is devoted to the myriad ways in which Popper and Engels' scientific theories account for, and are formulated within, the nexus of politics, science, and history. Both authors made explicit attempts at theorizing the role science plays and has played in the aforementioned arenas, but offered their own normative and proscriptive viewpoints on what this role should be. Furthermore, both authors wrote on the impact politics and history played in the development, understanding and implementation of scientific understanding.

4.1 Popper and Engels' View on Knowledge Justification

In this part of the analysis chapter I will compare Popper and Engels' approaches to knowledge. Earlier I have attempted to analyse their theories in light the way in which they intended to convey their thinking, and their intentions in doing so, and so here I will build on this foundation to compare their ideas. By focusing on several key passages from Engels' *Dialectical and Historical Materialism* and comparing them to Popper's theory on the matter I will argue that their ideas are more similar than is perhaps commonly understood.

The comparison will in the main touch on their views on knowledge justification, specifically how it relates to induction on the one hand and falsification on the other. Induction refers to the belief that knowledge can be more than a simple collection of observations, in other words that one can make generalisations based on observations. A famous conundrum which explains this term is the "white swan problem", which asks whether or not one is justified in calling all swans white because all hitherto observed swans have been white.

As I have already discussed in previous chapters, Popper famously critiqued induction as being altogether unscientific. Instead, he proposed that falsification was the hallmark of science. Falsification asserts that statements about nature, or hypotheses, can never be proven – they can only ever be disproven.

As I have already mentioned, Karl Popper was a key figure in establishing falsifiability as one of the key tenets of modern science. Thus, comparing this aspect of Popper and Engels' theories is an important one. As I have discussed in earlier chapters, Popper's belief that Marxism relied on inductive reasoning was one of the key factors which led Popper to reject its scientific merit, and Popper integrated just such a rejection into his critical rationalism.

In his critique of Marxism, Popper argued that it was essentially an unfalsifiable ideology which did not propose hypotheses which could be effectively disproven and instead relied on generalised induction. While I will not argue that there is no such reliance on induction to be found within Engels' dialectical and historical materialism, I will however attempt to show how Engels took a nuanced approach to knowledge, blending induction and a sort of proto-falsificationist approach.

As I have already argued, there is not necessarily a mutually exclusive relationship between Engels' theory and the usefulness of non-inductive knowledge. Indeed, Engels, as part of his attempt to integrate deduction into his politics and philosophy sought to make experiment and falsification a keystone of his theory. To substantiate this argument I want to analyse a passage from Engels' *Dialectics of Nature* wherein he expresses just such an attitude.

The following passage from *The Dialectics of Nature* details a series of events wherein Engels observes phrenologist Spencer Hall conducting various pseudo-scientific "magnético-phrenological" performances. Engels, sceptical, then undertakes to perform his own mock phrenological exhibitions. I have quoted it in length due to its significance, although I have shortened it slightly to highlight the most salient parts.

Now it happens that I also saw this Mr. Spencer Hall in the winter of 1843-4 in Manchester. He was a very mediocre charlatan, who travelled the country under the patronage of some parsons and undertook magnético-phrenological performances with a young girl in order to prove thereby the existence of God, the immortality of the soul, and the incorrectness of the materialism that was being preached at that time by the Owenites in all big towns. The lady was sent into a magnéticosleep and then, as soon as the operator touched any part of the skull corresponding to one of Gall's organs, she gave a bountiful display of theatrical, demonstrative gestures and poses representing the activity of the organ concerned; (...) right at the top of the skull he had discovered an organ of veneration, on touching which his hypnotic miss sank on to her knees, folded her hands in prayer, and depicted to the astonished, philistine audience an angel wrapt in veneration. (...) The existence of God had been proved. The effect on me and one of my acquaintances was exactly the same as on Mr. Wallace; the phenomena interested us and we tried to find out how far we could reproduce them. A wideawake young boy of 12 years old offered himself as subject. Gently gazing into his eyes, or stroking, sent him without difficulty into the hypnotic condition. But since we were rather less credulous than Mr. Wallace and set to work with rather less fervour, we arrived at quite different results. (...) To set Gall's cranial organs into action was the least that we achieved; we went much further, we could not only exchange them for one another, or make their seat anywhere in the whole body, but we also fabricated

any amount of other organs, organs of singing, whistling, piping, dancing, boxing, sewing, cobbling, tobacco-smoking, etc., and we could make their seat wherever we wanted. (...) But it must be well understood, no organ showed a trace of action until the patient was given to understand what was expected of him; the boy soon perfected himself by practice to such an extent that the merest indication sufficed. Dialectics. (Engels, 1925, p. 93)

In this important passage there are three things that I find highly relevant to my thesis question. First and perhaps most obvious is his unmistakably sceptical attitude towards what can only be called pseudo-science, an attitude which I will further analyse in chapter 4.4. Secondly, there is his juxtaposition of Spencer's claims and the materialism of the Owenite's, which I will further examine in chapter 4.3.

However, with regards to its importance in establishing Engels' relationship towards falsification it is important to note how he describes his demonstration of this very concept, which leads us to the third important utterance of the quote. After having described how he went about falsifying "magneto-phrenology" he then declares:

While we with our frivolous scepticism thus found that the basis of magneto-phrenological charlatanry lay in a series of phenomena which for the most part differ only in degree from those of the waking state and require no mystical interpretation, Mr. Wallace's "ardour" led him into a series of self-deceptions. (Engels, 1925, p. 93)

While it is clear that Engels views experiment and a sort of falsification of hypothesis as scientific, it might be important to note that he does not make this the hallmark of science, but calls it "frivolous scepticism", i.e. he takes it nearly for granted. From this one encounter it might be hard to say too much about Engels' attitude towards experimentation and even falsifiability as hallmarks of science, but one can at least get the sense that it played a definite part in his view of science. This is, however, not the only instance in which Engels describes a non-inductivist approach.

In the article "Popper's unacknowledged debt to Engels" the author Lahiri argues that Engels "anticipated" the idea of falsification, and points to passages which I will analyse. Lahiri's analysis shows how Engels' attitude towards induction was in fact, heavily counterweighed with an appreciation and emphasis on what Lahiri describes

as a sort of “proto-falsification” (Lahiri, 1998, p. 2837). Before we go on to this analysis, however, I will first discuss the relevance of Lahiri’s argument that Engels “anticipates” Popper’s falsification. It appears Lahiri adopts here a language, speaking of “anticipating ideas”, which seemingly fits a type of historical analysis which we saw Skinner critique in chapter 2. This raises the question of whether his argument that the ideas of Popper and Engels are similar in this area is valid or not.

Indeed this sort of phrase is actually specifically pointed out by Skinner, as part of his critique of the historical method which seeks to analyse texts as standalone works in an attempt to seek out what thinkers have said on “perennial issues”. The problem with this, as we have seen, is that one ends up changing the meaning of what the author intended to convey. I will however argue that Lahiri’s point has merit upon closer investigation.

This is because, although Lahiri employs this type of language, his actual argumentation upon further investigation actually deals with Engels’ idea with a particular concern for its intended meaning. In other words, by actually applying methodological contextualism we can see that while linguistically it might appear that Lahiri’s argumentation is irreconcilable with the methodology of this thesis we can see how in fact his actual intention is compatible with it. We will now see how Lahiri argues, in keeping with a meaning compatible with a methodological contextualist analysis, that Engels and Popper’s attitudes towards both induction and that which is now known as falsification actually are quite similar.

First, Lahiri points out that Engels in fact had a generally hostile attitude towards the validity of induction. He quotes Engels as writing

By induction it was discovered 100 years ago that crayfish and spiders were insects and all lower animals were worms. By induction it has now been found that this is nonsense... Wherein then lies the advantage of the so-called inductive conclusion? (Lahiri, 1998, p. 2837)

Furthermore, Lahiri points to Engels’ “castigation” of English philosophers for “the whole swindle of induction (Lahiri, 1998, p. 2837). This sort of argumentation could also simply amount to cherry picking, but as I have already discussed in the chapter on theory it was Engels’ intention to construct a theory of science which could serve

practical purposes and that was *dialectical*. We saw how Engels attempted to form a “theory of theories” in the same manner that Lahiri describes here. I would argue that Lahiri’s line of argument actually supports the same analysis of Engels’ intent as this thesis has carried out, showing how Engels intended to apply both induction and deduction.

Finally, Lahiri exemplifies the similarity between Engels and Popper in this regard by first supplying an additional quote from Engels, and then comparing Engels’ approach with Popper. Engels’ approach is exemplified in the following quote:

The form of development of natural science... is the hypothesis. A new fact is observed which makes impossible the previous method of explaining the facts belonging to the same group. From this moment onwards new methods of explanation are required (...). Further observational material *weeds out* (my italics) these hypotheses, doing away with some and correcting others, until finally the law is established. (Lahiri, 1998, p. 2838)

Lahiri then argues that what Engels’ is intending to express here is similar to Popper’s induction, and I would agree with his argument to a point. As we saw in the theory chapter, Engels did indeed apply this sort of thinking as a counterweight to his inductive approach. So far, it seems that while the selected passages provided by Lahiri points to an Engelsian “proto-falsification”, a methodological contextualist approach underscores that it runs counter to his overall intention. Thus, it is difficult to conclude that Engels and Popper’s theories on falsification are similar to a high degree.

But Lahiri’s argument does not in fact end there. He continues by pointing out that not only did a “falsificationist” approach play a big role in Engels’ overall theory of science, Popper on the other hand also acknowledges a sort of “quasi-induction”. Lahiri points to Popper’s *Logic of Scientific Discovery* (the title of which seems to be a poke at Hegel’s *Science of Logic*) where Popper describes how one can in some way discern a general “path of science”. This “path of science” Popper writes, consists of a general trend for theories to advance towards higher levels of universality (Lahiri, 1998, p. 2838). So while the theories of Engels and Popper are “brought together” only slightly by an acknowledgement of the role that deduction and scepticism towards induction actually played, he is also pointing out that Popper in some sense saw a place for a

“quasi-induction”. Specifically, as a valid way of describing a certain aspect of the evolution of scientific laws. However, I would argue that this only constitutes a slight nuance in Popper’s overall theory, as it is difficult to get a grasp of Popper’s intended meaning from this short, isolated phrase alone.

Still, from what has been discussed so far, I would argue that I have shown how Popper and Engels’ thinking share some striking similarities. However, the emphasis the two thinkers put on the role of induction and falsification is quite dissimilar, where induction is to a large extent only seen emphasised in the works of Engels.

To summarize, in this part of the thesis we have analysed the similarities and differences in Engels and Popper’s conceptions of science with a particular focus on their relation to notions of epistemology. I have argued that this analysis shows a remarkable degree of similarity between their ideas on this subject.

We have seen how Engels approached the subject of inductive knowledge with an acknowledgment that a sort of “falsification” or at least general scepticism plays an important role in relation to it. For Engels, inductive generalisations were valid to the extent they can be said to be applied practically, both scientifically and politically. In keeping with his general dialectical outlook, he rejects both one-sided inductivism as well as one-sided deductivism.

Though we perhaps find a developed idea of it in Popper’s thinking, Engels seems to have considered deduction an important counterweight to inductive thinking, similar to the relationship of Popper’s falsification and “pseudo-induction”. The main difference between them is how they situate or contextualize it within a broader idea of science. Engels’ “weeding out” is not given as much emphasis as with Popper, who instead stresses materialism as perhaps the defining aspect of scientific thinking.

4.2 Popper’s “Three Worlds Theory” and Engels’ Dialectical Materialism – an Accounting of Ontology

In this part of the analysis chapter I will look at Popper and Engels’ ideas on some important aspects of metaphysics. This analysis will be done in three parts. First I will

analyse their conception of the words itself, then I will analyse two ontological questions, one after the other.

The branch of the philosophy of science called metaphysics concerns itself with the fundamental nature of reality. Unlike epistemology, metaphysics is not necessarily concerned with the question of how humans can come to knowledge, but rather deals with the following question:

1. What is there?
2. What is it (that is, whatever it is that there is) like? (Hall, 2010)

Within these overarching questions are found a myriad of other issues pertaining to the “nature of reality”, such as questions concerning substances, properties, relations and so on. A concrete ontological issue would for example be the relationship between cause and effect. Whereas some of these ontological issues are marginal to Popper and Engels’ theories, at least in the sense that they are commonly viewed as such, others again are considered more central. Among the latter we find the two issues which I have chosen for this sub-chapter, namely the question of the relationship between mind and matter as well as the deterministic or indeterministic nature of reality. Not only are these issues important to their theories, but they also figure in Popper’s critique of Marxist scientific philosophy.

The methodological contextualist approach will be important and helpful in this discussion for several reasons. The first is that one must be weary of the fact that such an undertaking can easily veer into the sort of territory which Skinner critiques, where one searches for the views of historical thinkers on so-called “perennial” issues. Such a flattening of history obscures the context and intent of their authors. To avoid this issue my discussion will be rooted in an analysis of what the thinkers were intending to do in their utterances, and as we have seen, both authors were indeed attempting to convey a philosophy of science and also intervene in concrete contemporary political and scientific discourse in distinct ways. Thus, we do not need to “read into” their texts in order to then compare their thoughts, but rather analyse what the authors were attempting to convey.

The other major issue is that a contextualist approach can help clear up is that the central term *metaphysics* takes on a completely different meaning in the utterances of the two authors. While for both Popper and Engels the term was used to describe various philosophical modes of thinking, the concrete meaning they imbued that word with was dramatically different.

I have included two broad areas of comparison within the greater category of ontology, which I will discuss and define in this chapter. These are:

1. The question of the nature of, and relationship between, mind and matter
2. The question of substance ontology and determinism

In comparing the two thinkers on these points I will argue that their views on these subjects are in fact closer than is assumed, yet still remain fundamentally irreconcilable.

On the first question I will attempt to show how in his accounting of the relationship between, and the nature of, mind and matter that Engels in fact intends to convey not a reductive physicalism which ascribes all thought to underlying physical phenomena, but, while still grounding it in materialism, gives some level of autonomy to mental states – bringing him in my estimation closer to Popper’s “three-worlds” ontology.

On the second question I will deal with the question of substance ontology and determinism. On the question of substance ontology I will analyse how the two thinkers account for their view on *being*. With regards their ideas on the question of determinism I will attempt to show that Engels intended to convey a softer determinism than what is perhaps outlined in Popper’s conception of a dogmatic and mechanical Marxism wherein such a deterministic philosophy of science informs its near-teleological conception of historical development – which in turn explains, according to Popper, Marxism’s descent into dogma and political extremism.

4.2.1 Analysing Similarities in Their Approach to Metaphysics - its Meaning, and as a Demarcation of Scientific Thinking

As we saw in the chapter on Engels' dialectical materialism, metaphysics was used by Engels to describe ontological idealism, ascribing an ideal realm superiority over matter in an ontological hierarchy, such as was the case in the example of Plato's cave analogy. Engels, for example, used the word in an almost polemical sense to oppose idealistic schema of social progress such as those employed by the early utopian socialists, who attempted to explain the world and organize politically in terms of eternal *ideas* (Engels, 1970, p. 50).

Popper on the other hand used it comparatively more vaguely in his writings, perhaps owing to his scepticism towards essentialising attitudes towards language. He gives, however, three uses for the word, with each use for the term denoting a different sort of *theory*:

- the theories that cannot be verified (positivist way);
- the theories that cannot be tested (his own);
- general theories about the nature of the world (traditional way). (Ribeiro, 2014, p. 210)

As we can see from these points, metaphysics was used by Popper to denote untestable theories of the world. The paper "Karl Popper's Conception of Metaphysics and its Problems" provides us with an example of what Popper would consider a metaphysical system, namely monism. In the paper the author quotes popper as describing philosophical monism as metaphysical in the sense of being both untestable and relying on a "vast generalisation, on the grandest scale" (Ribeiro, 2014, p. 210). However, Popper's demarcation between his notion of science on the one hand and metaphysics on the other did not altogether stop him from appreciating the latter. While inferior in his mind to science, he still considered it "important" (Ribeiro, 2014, p. 209).

We can see that both Popper and Engels used the term as a means of demarcation between science and non-science. Where exactly they draw this line differs however, as we can see in the fact that whereas for Engels ontological tenets such as monism

are central to his notion of a *scientific socialism*, Popper on the other hand rejects all such ontological systems as unscientific.

How, then, can we understand the differences and similarities in their definition and approach to metaphysics? My main argument in analysing their similarities and differences have overall been to investigate the context in which they intervened with their “speech acts” and the ways in which they intended to be understood. As I have shown, Engels juxtaposed his scientific socialism to the early utopian socialists such as Fourier and Owen and was attempting to influence his contemporaries in the labour movement towards a rejection of “idealism” – a strain of philosophy which he saw as innately bound up with the ruling class of each era. Popper, on the other hand, was equally explicitly intervening against what he saw as pernicious “historicist” and teleological narratives in both the communist and fascist political movements. In that sense, both he and Popper were applying metaphysics as a critique of what they saw as the detrimental contribution of “unscientific” thinking in their respective contemporary political discourses.

4.2.2 Comparing Popper and Engels’ Thinking on Substance Ontology and the Mind-Body Problem

The first area of ontological comparison concerns Popper and Engels’ thinking on the relationship between, and the nature of, mind and matter. Specifically, this sub-chapter will touch upon two questions in this area of the philosophy of science. First, there is the question of what consciousness *is* and whether or not there is a divide between our conscious minds and external reality. We can call this first issue “the mind-body problem”. The other topic of comparison is their thoughts on states of being, or substance ontology as it is known in philosophy.

One might not perhaps associate the name Popper with much of a philosophical emphasis on substance ontology. Rather, it is his ground-breaking epistemology for which he is famous. However, Popper, as we have already covered in the theory chapter, had a novel and interesting ontological framework. We have seen how Popper had a pluralist ontology, and Engels a materialist one. Now, on the face of it, this would perhaps instantly lead us to conclude that there is not much to compare between them. I will however argue that there are significant *functional*, and perhaps to some extent

essential, similarities between the thinkers, and that these similarities are made apparent in light of an analysis of the intent of the thinkers. I will argue that Engels' materialism is more nuanced and pragmatic than that of a "mechanistic physicalism", and in that sense is more comparable to Popper's pluralist ontology than is perhaps commonly assumed.

I will deal with the aforementioned topics as more or less interwoven issues, treating the mind-body problem as essentially a set within the broader category of substance ontology. The reason for this is that both Popper and Engels' thoughts on the mind-matter issue stem rather directly from the ways they view substance ontology as a whole. I will start with briefly outlining the issue at hand, providing a brief explanation and examples, before moving on to the ideas of our two thinkers. Then, finally, I will compare their ideas on the subject. I will now give a brief overview of substance ontology and the mind-body problem.

Substance ontology deals with the question of what the world fundamentally consists of. Here, there has traditionally been a divide between idealists and materialists. Plato, for example, was an ontological idealist and contended that *ideal forms* were in a sense "more real" than their material counterparts. On the other side of the issue are materialists who see the world as being fundamentally physical. Thus, the idea of a table is not something real, but only an abstraction or a "mental image". These dichotomies are not an exhaustive accounting of the various ways in which philosophers have tackled these issues.

The mind-body problem, as already stated, refers to the philosophical issues of whether or not there is a divide between our conscious selves and the rest of the world. Here, famous philosophers have often fallen into either "monist" or "dualist" camps in their attempts at accounting for supposed mental and physical states of being. A monist is someone who believes that all of reality is made up of a single stratum, and that there as such is no division between our minds and the rest of reality. The atomism of ancient Greece would be one example of ontological monism. A dualist would be someone like Descartes who posited that our minds are made up of something fundamentally different than the rest of the world, and that there therefore exists a divide between our minds, and our bodies and the rest of the physical world.

Popper's "ontological pluralist" outlook meant that, at least nominally, he accepted the existence of multiple modes of existence such as matter, ideas, as well as mental states. Again, as has already been stated, such an ontology might put him very far off from Engels' materialism, but by factoring for the way in which Popper sought to make himself understood we can perhaps come to a different understanding. There are specifically two factors which I contend alter the perception of Popper's pluralist ontology, namely his overall emphasis on pragmatic problem solving and rejecting of essentialising metaphysics, as well as his specific clarifications on just how exactly he considers these "modes of existence" to be *real*.

In Popper's own conception of Marxism and materialism, he argued that Marxist "physicalist" ideas were philosophies which, while being seemingly potent solutions to many an ontological problem, were actually fundamentally unsound. Popper argued that while physicalism could reduce the world to simply a material realm, and thus for example avoid the difficult body-mind problem altogether, it nonetheless failed to account for "existences" other than the physical. To Popper, the existence of a world of mental states and a world of the products of these states were a spanner in the works for physicalism and monism (Thornton, 2021). According to Popper, the three worlds conception and the materialist conception are thus fundamentally at odds.

However, the criticism that materialism and Marxism failed to account for the notion that mental states had a degree of autonomy from and could act on the material was not unknown to Engels. Engels' reply to these charges against his philosophy was to qualify and nuance how he intended his materialism to be taken. Engels writes:

And if this man has not yet discovered that while the material mode of existence is the *primum agens* [primary agent, prime cause] this does not preclude the ideological spheres from reacting upon it in their turn, though with a secondary effect, he cannot possibly have understood the subject he is writing about. (...) Just as Marx used to say, commenting on the French "Marxists" of the late [18]70s: "All I know is that I am not a Marxist." -Letter to Schmidt, 1890. (Engels, 2000)

Marxism, according to Engels, had already at that time begun to take on a life of its own which was different from how Engels sought to make himself and his theory

understood. Indeed, so strongly did Engels reject this physicalist notion that he implies, by referring to Marx' reaction to that phenomenon, that he himself would not consider himself a Marxist if Marxism was "purely" physical.

In *Mind-body*, Popper uses the argument that if something can be shown to have an effect of reality then that thing can in some sense be said to be real in and of itself (Popper, 2013, p. 33). Interestingly enough, we see here in Engels a description of an "ideological sphere" reacting back upon the material mode of existence. It seems that while Engels also makes it clear that matter is the primary *cause* of things, he gives a degree of autonomy to an "ideological sphere" which can act upon matter. Engels seemingly appreciates in the same vein as Popper the notion that some things are "in a sense" real, although perhaps not ultimately so, because they can be said to have effects on reality.

Furthermore, in this excerpt there is a phrase which I find interesting and which I will argue can be used to show two things about Engels' thinking on the issue of mind and matter. This phrase is "ideological sphere". Engels' acknowledgment of an "ideological" sphere shows how Marxism, while materialist, ascribes a relative independence or "actuality" to ideals, at least according to Engels. Secondly, it provides an interesting point of comparison between Marxism and Popper's "three realms". In the very first sentence of this quote we can see that Engels is defining Marxism as relating to an understanding of "modes of existence". He proposes not a discrete, separate, and irresolvable stratification of reality, in other words not a simple "physicalism", but talks about "modes" of existence - which can and do interact. This description is interesting in the sense that the way in which he describes the *ideological spheres* is eerily similar to Popper's account of mental states.

Popper clearly expressed how his ontology was one of discrete, but not completely separate worlds (Sachs, 1976, p. 357). Similarly, through our analysis of Engels' intent, we can see that Engels' materialism was not the physicalist Marxism which Popper conceived of – but, similar to Popper's own theory, a theory of interacting spheres of existence.

My argument is that their ontologies have functional similarities. One such functional similarity is this similarity of interacting modes or spheres of existence. This functional

similarity is however juxtaposed to an *essential* difference. Throughout Popper's *oeuvre* he time and time again stresses the importance of an overarching pragmatic attitude towards science and philosophy. Popper does not necessarily state that reality "really" consists of matter, ideas, thoughts and so on, but rather that these are helpful ways of conceptualizing our world. Engels on the other hand, seemingly expresses a more essentialist view of ontology, arguing that matter, ultimately, is something *real*.

Where does that leave us in our analysis of their accounting of the mind-body problem? Popper argued that mental states could be considered real, because things are real to the extent that they have effects. While Engels uses different language to account for the mind-body problem, if we analyse it carefully, we see that they are both describing rather similar things – namely that both mind and matter do in some sense "exist". In Engels' letter he makes it clear that he and Marx as dialectical materialists reject such a notion as there only being one material existence, at least the simplistic version of physicalism which denies some qualitative difference between the mental and physical altogether. Indeed, when Engels is talking about differing "spheres", such as the ideological and material mode of existence, is he not approaching Popper's "worlds" theory?

However, this line of argument can only go so far. We see in the letter how Engels gives primacy to matter and is in the end a materialist. Popper on the other hand, as I argued earlier in the thesis, goes much farther in acknowledging the existence of ideas. Considering Engels' political situation, we perhaps understand that for Engels the materialist-idealist dichotomy had an immediate political relevancy. From his writings he makes it clear class struggle is the motor of historical and political development, and that an idealist approach to science is anathema to the aims of the working class. In light of this context it is perhaps easier to understand how he came to consider a materialist conception a cornerstone in his philosophy of science. Popper on the other hand, was emphatically arguing against what he saw as the detrimental effects of what he deemed "vast generalisations", namely exactly the kind of sweeping inductive philosophy of science which we have seen Engels employing (Ribeiro, 2014, p. 210).

In this subchapter I have compared Popper and Engels' ideas on substance ontology. Specifically I have compared Popper's *Critical Rationalism* and his "three-worlds" theory to Engels' *Dialectical Materialism*. I have argued that the two authors have

fundamentally dissimilar ideas on the subject, but nonetheless share some functional similarities which I argue are significant. Perhaps, as I have argued, such similar practical considerations can be understood through an analysis of their similar interventions into their respective discourses. Both thinkers grappled with the limitations of more abstract and essentializing philosophies, critiquing the use of such philosophies in the political and social sphere.

Furthermore, both authors also share a similarity in the emphasis they put on elaborating on the issue and emphasising its importance. I have argued that a methodological contextualist reading of Engels dispels the narrative that Engels thought that consciousness is dictated by external factors and that it is without any degree of autonomy. This, I would argue, indicates that Popper and Engels' thinking on the subject in fact share important similarities. However, that is not to say that their thinking is compatible. On the contrary, Popper went further in describing mental states as "real".

Engels' theory is not however, a strict "scientific" undertaking – in the sense that the sciences today have inherited from Popper. I have however also argued that even Popper made some room, or perhaps even concession, from a practical point of view to "metaphysical" theorizing. We have seen how Popper expounds upon his "theory of theories", attempting to formulate a schema which can describe from a practical point of view how reality "is" – stepping over his own bounds of what should be considered scientific. What they both share in this regard is a concern for practicalities, namely the need or wish to formulate an ontology.

4.2.3 Ontology and Determinism

The next area of comparison is Popper and Engels' thinking on ontology and determinism. In the science of philosophy, ontology is a subject grouped under the broader term "metaphysics". Ontology in the philosophy of science is the study of "being", encompassing such subjects as the nature of existence and reality. The determinist question in philosophy refers to whether or not events are wholly determined by pre-existing causes. Earlier in this thesis we have seen how Popper criticized Marxism on exactly these grounds, connecting the political failures of the

working-class movement to its entrenchment within supposed deterministic historicist narratives. This, I would argue, shows the importance of a thorough analysis of the two thinkers in regard to determinism.

I would argue that Popper made his thinking on this subject quite explicit. Popper identified determinism with a series of ramifications which he found abhorrent. In fact, so adamant was Popper in his opinion against determinism that he called it a “nightmare” (Clark, p. 150).

The paper “Popper on Determinism” summarizes Popper’s opinion on the matter in the following manner:

There is no doubt at all that the issue of determinism versus indeterminism was a central, dominating theme of Popper’s thought. By his own account he saw his criticism of the thesis of determinism as crucial to his defence not only of the reality of human freedom, moral responsibility and creativity but also as equally fundamental to his account of human rationality and to his theory of the content and growth of science as an objective enterprise. (Clark, p. 149)

Clark then points out how Popper’s wish to preserve the aforementioned values that it to some extent prompted the constructing of his “three worlds” theory. Clark writes how the theory was in part an effort to satisfy the philosophical conditions of indeterminism – the idea that one could not in a scientific manner find a chain of cause and effect for a given event (Clark, p. 150).

One of the reasons why this was such an important issue for Popper was the fact that he was grappling with political and philosophical currents which he felt applied a deterministic view to society, which in turn led to disaster. Popper for example, dedicated his work *The Open Society and Its Enemies* to the victims of the “communist belief Inexorable Laws of Historical Destiny” (Faever, 1971, p. 7). Popper, then, was strongly against the notion of determinism for both political, moral and scientific reasons.

To compare Popper’s clear indeterminist view with Engels I will now analyse Engels’ approach to the issue.

A well-known model for explaining the Marxist conception of the relation between mind and matter is the “base-superstructure” conception. The idea of the base and superstructure is that the ideological contents of our brains is in a sense determined by the way in which the production and reproduction of life is organised, and that this “base” can be understood as developing. The development of the base goes through historical “stages” and must ultimately end up in communism (Sherman, 1981, p. 63). This is the conception that Popper is referring to when he is critiquing the Marxist historicism.

However, I will argue that Engels in his writings did not intend for his writings to be understood as strongly deterministic, even if as Popper critiqued argued that there in some sense were historical laws. The base-superstructure model of explaining the relationship between science and politics will be examined more closely in the last analysis chapter.

I wish to point out that the words “determine” and “determinism” can hide many different meanings. This is an aspect wherein a methodological contextualist reading can nuance our comparison of the two thinkers. For Popper, if the universe was deterministic, it meant that there could in a sense be no freedom. If everything that we do is *determined* by factors outside of us, what is there left for personal agency? However, as the article *Marx and Determinism* points out, Marx argued that while there are certainly “given conditions”, men make their own history. The article writer points out how there is no need to set a determinist view of history up against personal freedom.

There is also an additional way in which our understanding of the meaning of Engels and Popper’s thinking on the subject is altered by a methodological contextualist reading. Let us consider the context within which Popper and Engels were writing, and what historically contingent issues they were attempting to grapple with and how these factors might alter our comparison of their ideas.

Popper, as we have seen, was operating in a context where he identified historicist political movements, who sought to fulfil “historical destinies”, confident in their ability to both understand society and foresee the effects of their actions on that society. Thus,

when he rejects determinism, specifically Marxist determinism, he is in a sense operating within a context where it is natural to juxtapose determinism and freedom.

The context within which Engels was arguing was not on the question of hard determinism, rather, he was operating within the idealist-materialist dichotomy. The reason for his writing on the “ultimately determining element in history” was not because he was trying to argue that every thought any person has can find its root in the material base. Rather, it was an attempt at countering the idealist strain of philosophy which argued that society could be changed on the basis of ideas alone.

Consider for example this quote by Engels:

According to the materialist conception of history, the *ultimately* determining element in history is the production and reproduction of real life. Other than this neither Marx nor I have ever asserted. Hence if somebody twists this into saying that the economic element is the *only* determining one, he transforms that proposition into a meaningless, abstract, senseless phrase. (Engels, 1999)

As I have discussed elsewhere, there is a conception of Marxism or of Marx and Engels’ thinking which critiques its supposed deterministic view of the relationship between matter and human affairs. This is a critique which is also found within Popper, who argues that this prophetic quality of Marxism can act as a cover for all sorts of heinous or thoughtless acts by virtue of being in service of a supposed “greater good”. However, Engels did in fact not, as I have argued, ascribe to such a “hard” determinism. The first difference between Engels’ conception and a hard determinism is that he conceptualised this relationship between matter and society as a dialectical relationship, not an overdetermined one as I argued in the analysis of the mind-body problem. Furthermore, as I have attempted to show here, Engels’ materialism was first and foremost his attempt at grounding socialism in an objective factor, and that the materialist conception intended to account for the material constraints of politics – not necessarily impose absolute determinism (Sherman, 1981, p. 69).

How, then, do Engels and Popper’s conception of determinism compare? As we saw in the last chapter, Popper argued that mechanistic materialism would lead to philosophical determinism, which in turn motivated a historicist form of thinking. I would argue that Engels was in a sense a determinist, but that this determinism was of a

weak kind. While one might argue that they are closer than how Popper conceived of it, I would be hesitant to describe it in such terms. As we have seen, Popper was fundamentally against the notion that humans could grasp or manipulate the inner workings of society, and strongly argued against any attempt at establishing historical laws. While Engels might not have been a strong determinist, he nonetheless differs greatly from Popper's conception in that he does in fact outline in general terms such historical laws.

4.3 Popper and Engels' Accounting for Science and Society

In this chapter I will discuss and compare the ways in which Popper and Engels accounted for the myriad ways the topics of science and society intersect. I will cover three relevant topics, namely: Their scientific views of history, their view on scientific attitude and objectivity, and finally their view on the role of philosophies of science in politics. I will cover these topics in three separate sub-chapters. After having done so, I will summarize the chapter in a fourth and final sub-chapter.

4.3.1 Engels' and Popper's Scientific View of History

"History is nothing but the activity of man pursuing his aims" – Marx and Engels, from *The Holy Family* (Hollander, 2011, p. 5).

I will now compare and analyse Engels' and Popper's ideas on the intersection of science and society. I will compare their thoughts on what could be considered a scientific theory of history, as well as their thinking on such a theory. In this part of the chapter on their thinking on science and society I will argue that we see a sharp divergence, and that this is a divergence which is to be expected given our analysis of their intent and intervention.

Let us first start by examining Engels. Engels, famously, was a communist. As has been discussed throughout the thesis, his political communism was underpinned by a dialectical and materialist philosophy. Having thus already established the way in which Engels' politics was informed by his philosophy of science, let us examine what sort of conclusions he drew from it in relation to an understanding of history. In order

to gain a better understanding of the way in which Engels sought to account for this topic, I will analyse the famous quote from Engels' eulogy at Marx' gravesite.

What is interesting here is that such a speech act as a graveside eulogy can in my opinion be understood as one where the performer wishes to present central aspects of the subject of the eulogy's life. Thus, I would argue that this eulogy is one where Engels presents his understanding of the central tenets of Marx' life and works, and thus by extension the ideological current which Engels also very much felt he belonged to – this latter point having already been argued earlier in the thesis. Why is this relevant to the case at hand? As we shall see, what Engels' eulogy is presenting as Marx' most noteworthy accomplishment is the “discovery” of the “law of development of human history”. I would therefore argue that this eulogy is particularly well-suited for establishing an understanding of Engels' conception of history from a scientific point of view. What follows is the relevant passage from Engels' eulogy:

Just as Darwin discovered the law of development or organic nature, so Marx discovered the law of development of human history: the simple fact, hitherto concealed by an overgrowth of ideology, that mankind must first of all eat, drink, have shelter and clothing, before it can pursue politics, science, art, religion, etc.; that therefore the production of the immediate material means, and consequently the degree of economic development attained by a given people or during a given epoch, form the foundation upon which the state institutions, the legal conceptions, art, and even the ideas on religion, of the people concerned have been evolved, and in the light of which they must, therefore, be explained, instead of vice versa, as had hitherto been the case. (Engels, *Karl Marx' Funeral*)

In essence, Engels is arguing that Marx discovered, like a natural law, the law of the development of human history. While in the quote he does not go into depth on this materialist view on history, he does elaborate on it in other works. For example, in his well-known anthropological work *The Origin of the Family, Private Property and the State* he attempts to give a concrete analysis of how different ways societies reproduce themselves impact their “politics, science, art” and so on. In fact, he traces concretely different so-called stages of culture and their development, and how changes in their material mode of production impact their politics and ideas. He for example describes

how, in stages, the development of herding as an economic factor led to the subjugation of women and the accompanying ideological notion that women belonged as property to men (Engels, 1993, p. 87-88).

From this and from Engels' myriad speech acts, we can see how he sought to formulate and convey a materialist view of society which in itself he saw as an expression of a materialist factor, namely an expression of the interests and experiences of the modern proletariat. This is his explicit connection between his philosophy of science and his view of politics. Essentially, Engels is here arguing that politics should be understood against the backdrop of the struggle to produce and reproduce life. The famous "base and superstructure" conception is a simplistic, yet useful, way of understanding the relationship Engels imagined between science and society. For Engels there were deep and really existing "structures" of society, above and beyond the development of these humanity could not reach. In other words, the fundamental determining aspect of the character and development of legal, philosophical, moral thought et cetera is the way in which society reproduces itself materially. Through what he argued was a scientific method, i.e. that of induction-deduction, Engels established his historical materialist understanding of society. This embrace of induction as a valid method of science I have already shown to run (more or less) counter to Popper's view.

As I have argued in the sub-chapter, this fundamental dialectical materialist method of Engels' science was rejected by Popper. Does this mean, then, that the two thinkers have nothing in common at all? I would argue that it does not. I have argued that the view of Popper's rejection of induction should not be taken as an absolute but include Popper's practical embrace of a "quasi-induction". Thus, I would contend that simply constituting some "theory" on history does not mean that Engels' attempt at a inductive-deductive accounting of history must on all accounts separate him from Popper's view. It is undoubtedly true that Popper emphasises deduction and falsification, and in the main rejects induction and what he considers unscientific metaphysics, he does leave some room for the "quasi-induction" which has been covered earlier in the thesis. I would still, however, argue that already at this venture they seem to have little in common on account of Popper's rejection of induction.

Additionally, there is another central point which I argue put them much further at odds still, and which should lead us to conclude that their scientific views of history are more

or less incompatible both functionally and in their essence. This factor is Popper's view on the impossibility and undesirability of modelling society to produce long-term predictions. Engels theory of grounding an understanding of human activity in material factors puts him at odds with Popper's view of society. Not only on account Engels' specific view of society, or the way he goes about establishing it, but perhaps more importantly because he makes the attempt to scientifically explain it at all. This is an endeavour which Popper lambasted as not only futile, but fraught.

On the possibility of prediction in the social sciences, Popper writes: "Long term prophecies can be derived from scientific conditional predictions only if they apply to systems which may be described as well-isolated, stationary and recurrent" (Hechter, 1995, p. 1522). As we can see from this quote, Popper took umbrage with attempts at deriving laws of historical progress or indeed prophesising about the future of human society, due to the chaotic nature of society. Furthermore, in both his "Open Society" and his "The Poverty of Historicism" he makes it clear how the attempt at formulating laws of history or grand narratives on the inner workings of society ultimately lead to deleterious politics as pragmatic doubt is set aside for misguided and fanatical certainty. Marxism, and thus Engels' thinking, is according to Popper totalitarian, anti-rational historicist dogma.

Marx and Engels made numerous predictions during the course of their lives. Some have stood the test of time, while others have not. Perhaps one of Engels most impressive forecasts was his "prediction" of World War one, forty years before its outbreak. In every detail he described it as such:

And, finally, the only war left for Prussia-Germany to wage will be a world war, a world war, moreover of an extent the violence hitherto unimagined. (...). The depredations of the Thirty Years' War compressed into three to four years and extended over the entire continent (...) Only one consequence is absolutely certain: universal exhaustion and the creation of the conditions for the ultimate victory of the working class. (Wolfe, 2017)

This forecast might have seemed impressive, perhaps even to Popper. I have omitted several other (more or less) accurate details provided by Engels for the sake of brevity, but even without each and every detail it is clear how accurate a description it is.

However, Popper's critique of historicist narratives were not that they couldn't be proven right from time to time, it was they never could be proven wrong. If Engels was a historicist, and Popper one who dismissed attempts at scientifically explaining history – what is there left of substance between them to even compare in this field?

I have argued earlier that Engels was no mechanical determinist, who thought that each and every event was over-determined. While the polemical nature of many of his speech acts led him to language which might make his theories bombastically certain of the inevitability of this or that outcome, I have pointed to factors which should temper our understanding of Engels as an unabashed historicist. While it is outside the scope of this thesis to discuss exactly to what extent Engels and his Marxism can be said to fall under the scope of “historicism”, I would still contend that the major points, that of establishing “historical laws” and making predictions based on them still hold true. This has been shown, for example in this sub-chapter by Engels’ comparison of the materialist view of history to Darwin’s theory of evolution.

Thus, it might seem that there is little in common after all between Popper and Engels’ views of history. Engels seemingly had no problem applying what he considered to be a scientific view to human history and society, whereas for Popper a central part of the way his science influenced his view of these topics was to reject this very connection.

In this sub-chapter I have compared Engels’ and Popper’s conceptions of history from a scientific point of view. I argue that I have shown how, perhaps not surprisingly, this is an area of little overlap. Indeed, I have attempted to argue how this lack of similarity is congruent with the analysis of their intent and the ways in which they sought to intervene, i.e. based on our understanding of their ideas from a methodological contextualist points of view.

Engels’ view was that of an active revolutionary, who threw his lot in with and on behalf of organized labour. While his works have been understood, and this understanding in no small part can be found in Popper, as a teleological dogmatist, these mechanistic and teleological notions of his materialist conception of history stem partly from the polemical style of his speech acts, which must be understood in this aforementioned context. The issues he grappled with were the seemingly insoluble contradictions between labour and capital in the Victorian era, a contradiction which he attempted to

solve through his materialist dialectic. Engels did to a large extent believe that through a scientific analysis of society one could predict trends, both in the short and long term. As I have argued, these points show how little in common Engels and Popper had in their views of history.

Popper on the other hand had seen what he saw as dogmatic excesses and political inflexibility in the labour movement and sought to intervene against the influence of totalitarian ideas. We can see the differences in their ideas of science and their connection to politics in the ways they conceptualized the source and importance of different types of ideologies. For Engels, ideas sprang forth from different classes and were important as they represented the different material interests of those classes. For Popper, the ideas themselves gained a foothold through their nature as political “panacea” and as seemingly potent explanatory models. So, far from Engels being a strict mechanical and teleological prognosticator he, like Popper, emphasised the role of ideas in the development of human history. Likewise, Popper is not necessarily without some scientific thinking on this development either.

4.3.3 Their View on the Role of Philosophies of Science in Politics

In this sub-chapter I will analyse and compare how Popper and Engels viewed the connection between science and politics. Both in the sense of the ways in which they account for politics from the point of view of their philosophies of science, but also the prescriptive political conclusions they might draw from their scientific ideas.

I will first analyse Engels views on the matter. Then, I will present and analyse Popper’s view, as well as his critique of Marxism, all the while comparing his views to Engels’. In the thesis I have argued that similarities in intent and context, as well as of intervention, give rise to striking similarities between the two thinkers. In this sub-chapter I will however argue that there is a serious divergence in the way they understood science in relation to politics, highlighting exactly the differences behind their intent and interventions into political and scientific discourse as well as their different philosophies of science. Specifically I will argue that while both thinkers seek to convey a politics which is derived from a philosophy of science, they fundamentally

diverge in regard to both their descriptive and normative understandings of the subject. Let us now first turn to Engels' view.

In relation to Engels' scientifically descriptive accounting for society from a I have argued that dialectical materialism is an appropriate term. I have also argued that there is an almost unequivocally clear line between this philosophy and Engels' political communism, thus forming a normative or proscriptive view of science and society. Essentially, this argumentation can be summarized as an attempt to show how his dialectical materialism is connected to both:

1. His materialist, which he saw as scientific, analysis of his contemporary society as being one defined by a struggle between proletarian and bourgeoisie
2. His identification with and support for the so-called "proletarian movement", i.e. the nascent international labour movement

Indeed, in earlier chapters we saw how Engels saw politics as an extension of the "mode of production" of a given society. Ideology, in the broadest sense of the term, were reflections, or expressions, of actual material things and their relations.

From his "perch" at his father's textile mill he had first and second-hand experiences with the developing capitalist industry where he was directly involved in the buying and selling of commodities, the employment and upkeep of machinery. Engels would feed the knowledge and insight from this area of his life to his compatriot Marx, where it would inform the analysis in Marx' *Capital*.

If his materialist outlook saw politics as ultimately contingent upon the reigning mode of production, Engels identified this capitalist industry as the material reality of his day. The production of commodities, wage-labour, and profit-seeking, then, were the basis of society from which ideology sprung. Here is relevant perhaps one of the most famous passages from either Marx or Engels, the opening shots of the communist manifesto: "the history of all hitherto existing society is the history of class struggle" (Marx, 2018, p. 30). If we put his general materialist outlook together with his analysis of his contemporary society as a capitalist one we can see how Engels would come to identify two major classes, bourgeoisie, and proletarian as the actors in the political arena.

I have now argued how Engels saw, from a materialist point of view, politics and society at large as being defined by class struggle. However, I have yet to establish the connection between his materialism and his political communism. What in his materialist understanding of politics led him to essentially identify the proletariat with being the force in society which would or could lead to a more favourable society?

Today it is perhaps simply granted that there is an intimate link between communism and the working class, however at Engels time this was not a given. Indeed, in the thesis I have already discussed how Engels' writings can be seen as interventions against the utopian, and other, strains of socialism. These utopians argued, according to Engels, for models of political development which assumed that the propertied elements of society, and society as a whole, could be won over by appeals to some ultimate ideal of justice and reason. Engels blamed the failures of Utopian schemes such as Owen's New Harmony on the Utopians' fundamental *idealistic* strain of philosophy.

For Marx and Engels, not only was idealism a product of the conditions of the ruling class, but it also served as a tool of that class. The working class would forever remain under the yoke of the bourgeoisie if they did not break with that strain of ontology which ascribed relative independence to ideas vis-à-vis material nature. In the paper "Engels as an Ontological Materialist" the author writes:

Marx and Engels affirmed that it is not so easy to deceive the workers. (They) "do not believe that by "pure thinking" they will be able to argue away their industrial masters and their own *practical* (my italics) debasement (...) They know that property, capital, money, wage-labour and the like are no ideal figments of the brain... (Ferraro, 1989, p. 135-6)

A materialist understanding of society, made it impossible for Engels to accept socialist visions which did not include a class struggle, or which didn't have at its core the common ownership of the means of production. Where the Owenites had sought to usher in socialism by means of utopian experiments in communal living within the existing order, Engels' materialism led him to argue that socialism could only be realized by a politically independent proletariat. In Marx and Engels' co-written Manifesto they write: "All previous historical movements were movements of minorities,

or in the interest of minorities. The proletarian movement is the self-conscious, independent movement of the immense majority, in the interest of the immense majority.” (Marx, 2018, p. 57-58)

This class politics was according to Engels the true “scientific socialism”, or communism. In his *Principles of Communism*, Engels writes: “Communism is the doctrine of the conditions of the liberation of the proletariat.” (Engels, *Principles*). Thus, I argue that Engels’ view of society can be traced from his philosophical materialism, i.e. his scientific ideas, through to his class politics.

From his materialist *scientific socialist* method, Engels purported to not only be able to understand society and identify its progressive elements, but also draw distinct lessons on what society *should* look like. One concrete example is his theory on the so-called *dictatorship of the proletariat*, which he saw as exemplified in the government of the Paris Commune. Engels drew from this observation or experience and consciously attempted to integrate it into his theory.

For Engels, science played a fundamental role in politics as a tool for uncovering and analysing the inner workings of society and guide humanity through to what can almost be described as a “higher stage”. Having thus argued for an understanding of Engels’ descriptive and prescriptive scientific accounting for politics, let us similarly establish an understanding of Popper’s ideas on the matter, all the while comparing them to those of Engels

While in the last sub-chapter I argued that Popper to a great extent can be said to not have had a holistic view of society in, its make-up and tendencies, there is still much to be said on Popper’s thinking on the subject of the relation between science and society. First and foremost, Popper clearly formulated a proscriptive view of society, one which he explicitly drew from his philosophy of science. In some regard, this insistence upon a scientific view of politics must be seen as a similarity between the thinkers.

I have argued that Popper’s view of science was that of science as an exercise in “Critical Rationalism”, which was characterised by a problem solving and an attitude of overarching doubt. Doubt in one’s theories and in the human capacity for reaching any final understanding. How, then, did this Critical Rationalism inform Popper’s view of

politics? Already I have pointed out how one aspect of Popper's scientific view of politics, paradoxically, was a rejection of the possibility of a scientific understanding of society. Popper argued that any claim to theory-status from political ideologies was untenable. However, this does not mean that Popper did not have a prescriptive view of science. Instead of grand historicist narratives, Popper famously proposed an "Open Society", a model of politics drawn directly from his vision of science.

As the paper "The Political Philosophy of Karl Popper" points out, there are many possible interpretations of Popper's Open Society. It has been seen as fundamentally anti-revolutionary, and also as democratic socialist (Lesnoff, 1980, p. 99). The same author however, argues that Popper's politics is in essence advocating for a society based on non-violence, liberal democracy, reasoned debate and piecemeal social engineering (Lesnoff, 1980, p. 118-119).

In that sense it is not a blueprint for how best to constitute a government, neither is it a set of specific policy proscriptions. According to Popper, this would be tantamount to constructing a utopian blueprint (Lesnoff, 1980, p. 118). Here I would argue that Engels and Popper share some interesting similarities, in that they both rejected what they saw as "utopian" forms of political philosophy.

Why did Popper argue for reasoned debate and piecemeal social engineering instead of concrete political forms or measures? According to Lesnoff, Popper's view was that:

Social forms evolve, to a large extent in undesigned ways, but we can significantly influence this evolution (...) We should not try to be Utopian social engineers, any more than we should be content to obey inevitable historical forces; we should be piecemeal social engineers. (Lesnoff, 1980, p. 111)

Here we see how Popper's emphasis on fallibility also extended to his sociology, leading him to argue that humanity can not have perfect knowledge of conditions or of outcomes, and should therefore steer clear of large-scale change such as for example revolution. Furthermore, Popper argued, echoing his scientific method, that large scale change would be difficult to understand as too many factors would be changing at once. Small-scale change however was more manageable, and one could gain a better understanding of it and also more easily reverse any negative outcomes.

For Popper, then, politics was about incremental reasoned change. Not only in terms of policy but also in the building of institutions. His opposition to revolutionary politics and strident class-war is obvious, and I argue an important factor which should lead us to see Engels and Popper's scientific views of politics as fundamentally dissimilar.

I argue that this dissimilarity is directly traceable to their differing views of science. Here, Popper argues along similar lines. Popper points out how Marxism's "essentialist" view of the state as an instrument of class domination led them to revolutionary politics, and their embrace of induction lead them to believe that they can understand society and predict the ways it will change. They embrace drastic social engineering on account of their inductive science.

Engels saw political institutions arising from material modes of production, which could be understood and analysed. Popper rejected this notion and argued for a different view of the role of political institutions. Popper gave a central role to institutions and argued that if one can does not understand or drastically change institutions, the point should be to "design them" trough rational discussion (Lesnoff, 1980, p. 116).

The idea of reason and non-violence is so crucial in Popper's open society that the idea of complete democracy is also rejected, on grounds that it according to him is a poor guarantor of the values of the open society, such as in the case of the democratically elected tyrant. Institutions therefore should be designed to limit the power of rulers, and allow for their recall (Lesnoff, 1980, p. 118). For Popper, then, it becomes hard to embrace drastic actions even as means to drastically better ends, as his idea of science as fundamentally about doubt and fallibility leas him to conclude that it is impossible to fully understand what consequences policy will have on the chaotic social sphere.

Engels on the other hand rejected and even ridiculed non-violence, and explicitly advocated for revolutionary violence, writing in response to anarchists saying:

A revolution is certainly the most authoritarian thing there is; it is the act whereby one part of the population imposes its will upon the other part by means of rifles, bayonets and cannon (...) Would the Paris Commune have lasted a single day if it had not made use of this authority of the armed people against the bourgeois? Should we not, on the contrary, reproach it for not having used it freely enough? (Engels, *On Authority*)

Having rejected reason, due to his notion of irreconcilable class differences which I have argued he drew from his scientific ideas, as a force capable of bringing about socialism Engels saw no other way than violent revolution to bring about socialism. Here again, we see how their differing ideas of science push them apart in their political thinking.

For Popper, politics was in the same sense as science pragmatic problem-solving. The role of science in politics was not to inform the political actor of a certain understanding of politics or to be a blueprint for action and change. Rather, science should instil doubt and common sense rationality.

Where does this analysis leave our understanding of how Popper and Engels compare on the subject of science and politics? I contend that the points raised are strong indications of what I have argued, namely that Engels' and Popper's differing views on the science of philosophy lead them to view the specific role of science in politics from incompatible perspectives – seeing as they both draw their views of politics from their views of science. In this contradiction between the two men lies however a similarity, namely their shared intention of formulating a scientific view of politics, and an emphasis on the pernicious nature of whatever is to be considered unscientific in politics. Indeed, an intervention into politics with a scientific critique and platform for politics is something they share on a fundamental level.

In this sub-chapter I have compared Popper and Engels' views on the role of philosophies of science in politics. I have argued that they share points of similarity in stressing the importance of just such philosophies, and in descriptively analysing this interaction. For Engels, philosophies of science ultimately emanated from material conditions and as such each could be said to represent the conditions and interests of one class or another. For Popper, however, the ideas themselves were seen as influencing politics. In other words, Popper ascribed a higher degree of independence to such ideas. Clearly, their views on the matter are closely linked with their ontologies.

For Popper there are two important ways in which he sees science in connection to politics. Namely, a scientific critique of historicist narratives, and a proscriptive view of how his Critical Rationalist inspired “Open Society” model can help stymie irresponsible and overreaching social engineering in favour of incremental, reasoned policy change

and institutional development. Engels on the other hand, was a steadfast critique of political philosophy which was seemingly universal and abstracted-away from everyday matters. He identified appeals to “Reason” as fruitless, owing to the irreconcilable and mutually exclusive interests of the different classes.

From a normative point of view both authors can be said to have stressed the importance of a scientifically based philosophy of politics. Here however, the different ways they understood “science” led them to ultimately different conclusions. For Engels, science was an interplay of induction and deduction, whereas for Popper such inductive methods were considered inherently inapplicable to sociology. Furthermore, Popper rejected the notion of a class society as rooted in strict material factors and of class division in production. He could thus advocate for a civil politics based on reasoned discussion and incremental reform, which Engels would have possibly seen as “utopian”.

To conclude the comparison of their ideas on science and politics, I would argue that I have shown that the commonly held view of their politics as fundamentally incompatible holds true. Perhaps the most important factor which sets them apart is Engels’ view of the state as having a certain class-character, which Popper rejected as both misguided and pernicious. This materialist view, or essentializing view, as Popper calls it blocks Engels from viewing “reason” as a viable method of democratic governance.

4.4 Summary

In this chapter I have applied a methodological contextualist analysis to several points of comparison in order to research and understand the similarities and differences between the scientific and political ideas of Karl Popper and Friedrich Engels. By applying this methodology I have attempted to analyse their ideas in such a way as to peer beyond the text, avoiding superficial comparisons due to quirks of language and otherwise, and to look past ways in which their ideas have been interpreted contrary to their originator’s intentions. In bringing to bear a historical method of analysis I argue that this has produced a more meaningful comparison than a merely textual analysis. The point of this analysis chapter has been, then, to compare their ideas in a way which

preserve this intent. I have discussed the comparison of the two thinkers in the context of their similarities and differences in historical context, intent, and intervention. I have argued along contextualist lines that the fundamental difference between the two authors, namely their irreconcilable views can be understood in light of their reaction to their political context.

The first area of philosophy of science I compared was their ideas on epistemology. I argue that I have shown that one can find in Engels an embrace and integration of experimentation and a general sense of fundamental criticality into his view of science. Here a methodological analysis shows how Engels intended to emphasise and embrace a sort of “proto-falsification”, whereas the perhaps more common view of Engels fails to account for this. In this sense there is major overlap between the two thinkers. As we have seen in the passages where emphasises central parts of his philosophy of science it is precisely procedural, critical thinking and experimentation that are among the main things he points to.

On the question of ontology I have argued that their overall theories are fundamentally incompatible. While both Popper and Engels sought to denounce and escape “metaphysics”, a methodological contextualist analysis shows that they intended to mean different things with such terms. Popper described a pluralist ontology which he called “three worlds”. Such a conception is fundamentally incompatible with Engels’ dialectical materialist conception. Thus, I would argue that there is very little overlap between them in this area of scientific philosophy. On the subject of “mental states” Engels and Marxism has sometimes been interpreted as mechanistic and deterministic, leaving little or no room for the autonomy of mental states. I have however through an analysis of his intent argued that this difference is somewhat tempered by the fact that Engels himself did imbue mental states with a significant amount of autonomy, bringing him closer to Popper’s view on the matter.

In one regard, similarities in intent led both authors to establish a fundamentally critical notions of science which share similarities in several regards. I would however argue that an equation of their scientific views, or even arguing for their mutual inclusivity, would be missing the forest for the trees. If we take a broader view of their notions of science, we see that they diverge rather sharply. In the following chapter I will discuss

this point further and argue for how this development was influenced by contextualist factors.

Finally, I compared their ideas on the question of the relationship between science and society. Both authors stressed this connection and devoted much effort to explore the topic. Indeed, both authors attempted to explain the role of science in society, both in terms of the way science shaped society and vice versa as well as the role it *should* play. Furthermore, they both sought to base this explanation on their respective theory of science. I have, however, argued that they arrived at fundamentally different conclusions.

Popper's Critical Rationalism takes the position that ideas have a high degree of autonomy and are actually in some sense "real" things, because they can have an effect on the world. Popper argues that ideas have significant effects on society. Perhaps contrary to what is commonly understood, this in fact is somewhat similar to Engels' conception who saw ideology as a major factor in political life. One example of this is the role Engels thought that theory would play in the communist movement, a movement which he thought would come to fundamentally alter society. Engels stressed time and time again the importance of scientific ideas in politics, devoting much of his capacity to influence the ideology of the communist movement. Theory was crucial and could almost be considered as taking on a life of its own, but the ideas themselves had their origins in the development of material conditions.

However, the fundamental difference between them is how they account for the origin of these ideas. Popper at times seems to give ideas an almost platonic character, describing how ideas almost exist fully formed, such that it is up to people to "discover them". Marxism, and Engels' thinking on the other hand has been interpreted as being quite deterministic in the way it explains the origin of ideas in society. It has been argued that Engels proposed that the material base of society, its mode of production, determined its ideological content. Engels, however, stressed the *dialectical* relationship between the "sphere" of matter and the "sphere" of ideology, enabling both to act on each other in a reciprocal fashion – though in the "final analysis" ideas had their origin in the material. Thus, Engels' and Popper's conception of the role of ideas are somewhat similar in their effect, but the ways in which they understand the "causal" relationship is exactly opposite.

To summarize, then, I would argue that the two thinkers share some similarities in their philosophies of science, but their theories fundamentally diverge. In the next chapter I will analyse how they developed these similarities and differences.

5. Conclusion

In this chapter I will discuss what has been done so far, and the extent to which I have successfully answered my thesis question as well as argued for my interpretations. The thesis has been an attempt to shed light on the relationship between the ideas of two influential figures and the possibility for a reappraisal of the differences and similarities between them.

This research has been conducted through the lens of methodological contextualism, which has also provided the basis for my argumentation throughout the thesis, namely that the similarities and I have analysed can best be understood partly through similarities and differences in their intent and the context they operated within. Consequently, while a purely textual reading of their works might yield a certain understanding of the ways in which these authors compare, such a reading looks fundamentally different through a contextualist lens.

In this thesis I have researched and discussed the thesis question “How do the scientific notions of Karl Popper and Friedrich Engels compare?”. I have compared several central tenets of their philosophy of science and discussed how these two authors developed their ideas on science, and how they reflected on the connection between ideas of science and politics. Not only in terms of how their own notion of science informed their view of politics, but also how they understood this connection generally.

In the introductory chapter I presented the relevancy and further explored the themes of the thesis question. Here I argued that this research is relevant both from an academic and social point of view. Academically, I have argued that not only does this thesis contribute novel and significant observations, but also brings to bear an analysis which contextualises the works of the two authors. Socially, echoes of both Popper and Engels are again keenly felt in the sense that visions of the future, questions of

the connection between governance and science, and differing historical narratives again are on the agenda .

In the chapter on methodology and sources I presented and argued for my chosen methodology, namely Methodological Contextualism. I argued that this methodology is well-suited to this comparison as it allowed for a comparison not only of textual elements but allowed me to formulate a broader understanding of their theory and analyse the comparison between them in terms of their respective intent and historical context.

In the chapter on theory I built on what was established and argued in the methodology chapter, and argued for a specific understanding of Popper and Engels' respective frameworks. Specifically, I argued in favour of the term Critical Rationalism to describe Popper's philosophy of science and for the term Dialectical and Historical Materialism for Engels' theory.

In the analysis chapter I discussed three points of comparison, applying the understanding arrived at in the methodology and theory chapters. This thesis has argued that these points provide a suitable basis of comparison, as they comprise some of the major tenets of philosophy of science, tenets which were also central to Popper's and Engels' writings. On the basis of this comparison I have argued that they share a range of similarities, but that their theories of science and its connection to society are fundamentally incompatible.

Here I argued that the similarities between the men can be understood in light of the fact that both men sought to intervene in their historical context with a theory of science. Both men thought it important to launch scientific critiques of political movements and theories which they felt were harmful, while simultaneously providing an alternative political philosophy based on their own philosophy of science.

However, due to their different historical contexts they came to identify different problems and solutions in this regard. Engels' experiences with Victorian society and the development of industry led him to a conflict-oriented model of society, subsequently identifying the working class as the only progressive class. Engels developed his materialism as a tool for the working class to intervene in a seemingly

irreconcilable class conflict. This materialism sought to balance induction, deduction, observation, and scepticism.

Popper's experiences in Vienna in the first half of the 20th century, and later as an emigree after the second World War led him to different conclusion. The rise of collective, authoritarian "historicist" political movements heavily influenced the development of his Critical Rationalism, which emphasises the role of the individual as problem-solver, open debate, and incremental reform.

In an abstract sense one could argue that both men sought similar political ends. Human emancipation, the promotion of well-being et cetera are principles which can be found in the political thinking of both authors. This tells us that they both in a sense considered themselves progressive. I would however argue that their concrete political aims and their ideologies are fundamentally dissimilar and incompatible.

To summarize, I argue that I have shown how a methodological contextualist analysis supports a Critical Rationalist understanding of Popper's' thinking on science, and a dialectical and historical materialist understanding of Engels' thinking. Furthermore, I argue that I have shown how a comparison of these theories on several key points pertaining to the philosophy of science shows some interesting, perhaps even some novel, ways in which their ideas are similar.

This comparison, I have argued, is valid in the light of a methodological contextualist reading of their theories, as my analysis of their ideas has been done in such a way as to bear in mind the way in which the authors intended to have their utterances understood. Ultimately, however, I argue that I have shown the fundamental difference of their ideas.

These fundamental differences show that a comparison based on selected utterances or based on an attempt to grasp the "essence" of their theories, might lead one to conclude that they either have little overlap or are actually philosophically compatible. However, bearing in mind how Popper sought to solve completely different issues than Engels, and intervene in a different way, it is no wonder that their ideas of science are at odds. Engels attempted, as I argue I have shown, to give science and scientific socialism a *material* and *objective* basis, whereas Popper rejected this notion. Popper intended to grapple with a different dilemma altogether.

6. Further Research

In this chapter I lay out what further research could be conducted into the themes which I have explored in this thesis. I will point to some concrete areas of investigation as well as lay out in more general terms what further research could be done on the themes in this thesis.

While this thesis goes some way into exploring the relation of Engels to Popper, there are still other questions which remain. This thesis has applied methodological contextualism in an attempt to answer the thesis question, but it is by no means an exhaustive investigation into this relationship neither from an analytical or theoretical perspective. In other words, there might yet be other points of difference or similarity which are worth investigating from a methodological contextualist perspective, which could serve to either support or undermine the argument which I have furthered in this thesis.

The question of “meaning” looms large of any debate over the history of ideas, and as such this thesis must operate within certain premises, namely the methodological contextualist premise that the meaning of texts and ideas exists within and is constrained by historical context. However, this is not the only possible contextualist approach, and certainly not the only way of approaching the question of meaning altogether. Subsequently, it is natural to think that other theoretical perspectives on the nature of Engels’ and Popper’s thinking and the relationship between their ideas are still needed in order to establish a broader and deeper understanding of these thinkers. Both the topics which I have dealt with as well as others.

This thesis is in no small part a response or continuation to some of the arguments found in Ashish Lahiri’s paper “Popper’s unacknowledged debt to Engels”. In it, Lahiri points to the lack of research into the topics which I have attempted to cover in this thesis, but he also makes an interesting claim which I have only been able to give some slight attention. Lahiri suggests that Popper might have gotten some of his ideas on the role of non-inductive sources of knowledge from one of Engels’ works, specifically *Dialectics of Nature*.

I would argue that this is an interesting, albeit possibly tenuous, line of argumentation. Interesting, in the sense that it would be a remarkable discovery. Tenuous, in the sense that it seems highly unlikely and that Lahiri provides no other starting ground other than the fact that Popper might have possibly read Engels' *Dialectics*. Indeed, this thesis has argued that similarities can be understood through a lens other than a direct lineage, namely a contextualist framework. In my thesis I have analysed *Dialectics of Nature*, furthermore I have also referenced Popper's *On Dialectic*. In *On Dialectic* Popper makes clear his view of dialectics in general, both of the Hegelian and materialist kind. I would argue that if Popper was indeed in some sense inspired by Engels' *Dialectics of Nature*, one would expect him to at least reference that very work in the paper wherein he expounds on the topic of dialectics. Yet, as far as I can see there is not a single reference to the work itself within Popper's article. Still, this is but one foray into the connection suggested by Lahiri, and so perhaps a more thorough treatment is still warranted.

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