

NATURE, MODERNITY AND HISTORY

A Wittgensteinian Structuralist Approach to Environmental Problems

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Abstract

This essay is a multidisciplinary analysis of the human or societal causes of environmental problems. It argues that these problems are primarily caused by coordinated large scale human conduct in the structure of the modern industrial society. To make apparent the general nature of structures and their influence on human conduct, a Wittgensteinian structuralist methodology is developed. An analysis of a recent World Wildlife Fund report is provided to illustrate some crucial features of the socio-economic and industrial structure of modern society and their relation to environmental problems. Then, the historical emergence of modern society as a political and economic complex is discussed that deepens the present analysis of modernity. Finally, Carolyn Merchant's work on the human causes of environmental issues is critically discussed and compared with the present approach. It is argued that societal structures, rather than a particular kind of a world-view as Merchant argues, primarily direct the human being to environmentally consequential forms of conduct.

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CHAPTER 1

Introduction

This MSc thesis is a combination of an extended outline and a pilot study of a PhD project to be conducted over the next three years at the Science Studies Unit of Edinburgh University. The overall theme of the PhD is projected to be the following. Modern industrial society is generally agreed to be facing a multitude of environmental problems from decline of biodiversity to climate change. The PhD project asks what is it about modern society that makes it environmentally problematic? Being a work in the social sciences, and not for instance in the natural sciences, the issue is addressed by looking at the contribution of society to its environmental problems. It is not the asking of this question but the approach used to answer it that hopefully distinguishes the present project from various other works in the area: I will advance reasons for looking at modern society and its environmental problems *structurally*, that is, in terms of e.g. its socio-economic structure in its accompanying effects. On the one hand, this approach makes the project *philosophical*, for we must articulate the nature of a form of structuralism — as distinct from certain well known forms of structuralism in sociological literature. On the other hand, the project is *historical*: in putting its methodology in a practical test it looks at the structural development of modern society historically.

Being a preparatory essay for a PhD project, it relates to the official aim of the PhD project, namely, the production of ‘new knowledge’. The present essay is constructed around two related ways in which the PhD project is hoped to contribute to knowledge. First, it is an explicit and extensive application of some of

the philosopher Ludwig Wittgenstein's ideas about the nature of linguistic meaning *outside of philosophy*, mainly in areas of historical and sociological methodology. In particular, I use Wittgenstein to construct and defend a form of structuralism which in turn influences the picture cast of the nature of modernity and its history in the study. The significance of the methodology will be most apparent when it is compared with an alternative approach, that of Carolyn Merchant.

Second, I see the Wittgensteinian approach in contrast to a group of broad historical and philosophical approaches to the nature of modernity. This party emphasises the rationalistic, mechanistic, scientific and technological mindset allegedly underlying modernity, while the present project looks at modernity as characterised by the convergence of political and economic interests as testified by its socio-economic structure. I will naturally side with the second of these parties and consider Carolyn Merchant's work as an example of the first approach. This contrast is not fully developed in this essay but rather anticipates future work during the PhD proper. It is nevertheless important that the reader's attention is drawn to this wider issue at play in the background of the present work.

This essay is both a pilot study and an outline of the proposed PhD study. It is a pilot study in that the essay develops a Wittgensteinian methodology in some detail and spells out its implications regarding the issue at hand. This will give us a structuralist picture of the nature and causes of modern environmental problems, a picture which is then contrasted with a rival approach. The essay is thus also an outline of the proposed PhD thesis in that it maps out, and engages in some detail with, some of the areas and issues that will be of interest in the PhD project.

The structure of the essay is as follows. The methodology chapter sets out the Wittgensteinian methodology casting it as a form of structuralism, albeit crucially different from traditional forms of sociological structuralism. Based on Wittgenstein's views on the social nature of meaning I develop a picture of the motivations and capacities of the human being as the actor of historical changes under the banner *the human being as a pragmatic being*. The picture is a structuralist one in that it draws attention to the societal frame in which human beings live and act which in crucial, e.g. in environmentally consequential, ways direct our activities. The picture thus has implications in how we explain e.g. the emergence and causes of modern environmental problems. In other words, it is an analysis of the human/nature relationship as meditated by the societal structure within which human beings live and act in environmental consequential ways.

The third chapter begins with an analysis of the World Wildlife Fund report on modern environmental issues and the proposals they make to combat them. The analysis of the report exposes the influence of the structure of modern society to environmental problems: what are their causes, in what ways environmental issues are conceived of, or in what ways they appear, as problems, and how the societal structure of modern society constitutes the frame in which we address them. The second section of the chapter looks at the historical emergence of the aspects of modern society that can be seen as contributing to our environmental problems and the way we conceptualise and address them. It shows the historical emergence of modern society as a certain kind of a political and economic structure.

This overall picture of the structural nature of modern society and its relation to our environmental problems is finally contrasted with a rival view put forward by Carolyn Merchant. In Merchant's view, the human/nature relationship is mediated by what she calls the mechanical world-view, signalling certain human emotional disenchantment of nature as well as human manipulation and exploitation of nature. This then allegedly leads to environmentally problematic forms of human conduct. This picture is in some sense at odds with the present structuralist picture, a contrast that will be explicated in detail in the latter part of chapter three.

CHAPTER 2

Methodology

This chapter discusses the methodology of my MSc dissertation, as well as the PhD project. I begin with a broad characterisation of what can be understood by the term ‘methodology’. I move on then to setting out the methodology of the present project basing it on the philosophy of Ludwig Wittgenstein. I outline a Wittgensteinian account of the social nature of meaning and show in what sense it is a structuralist approach. It is then explicated further by comparison with Michel Foucault’s work. This, I argue, gives rise to a particular picture of the human being as a historical actor and a pragmatic being.

2.1 What is ‘methodology’?

Methodology can be characterised as a set of *ontological* and *epistemological* beliefs about one’s research object. Ontology concerns the existence of objects, epistemology concerns the methods of knowing about them. In practice, these two categories often become conjoined as will now be illustrated.

In humanistic sciences of the kind practised in this essay, ontological questions do not usually, only, and perhaps fundamentally, concern the matter of fact *existence* of an object — in fact, ‘objects’ of interest to social sciences, such as denoted by terms like ‘class’ or ‘opinion’ are not normally taken to exist in any material sense. That is, when we use notions like ‘class’ or ‘opinion’ we are not primarily confronted with the issue of what is the *entity* that the word ‘opinion’ refers to. So for instance, we don’t answer that question by arguing that in the given case there is something in an individual’s brain (a thought, a brain state) that is the

referent of the term ‘opinion’. That way of looking at the question is characteristic of some branches of natural science, and philosophy.

In social sciences we are rather engaged with the problem of *operationalisation* of concepts. This involves answering the ontological question *epistemologically*. We get to know about someone’s opinion by examining the various ways in which they can be seen as exhibiting them: in documents they produce, by asking them, by devising a questionnaire, by analysing their comments and reactions, and so forth. Again, the concept ‘class’ is also often illustrated epistemologically using, for instance, statistical data about income, occupation and so forth. One way of articulating this is to say that concepts like ‘opinion’ and ‘class’ are, as it were, *nets* that capture *patterns* in the flow of human activity. In the present project we won’t be drawing much from statistical or questionnaire data — they were used here merely as examples to make a general point. Our method will be one of telling a structuralist story about relevant aspects of the social frame in which historical actors act. We are here nevertheless engaged in an epistemological effort, for we describe certain general features of human existence that, by setting a certain general frame in which human beings live their lives, can be seen as structuring human existence.

The moral so far is, then, that we may continue to refer to them as ‘existing’ when we speak of classes and opinions, but we must bear in mind that the terms are used in a particular sense: when we operationalise, or use, concepts we must remember that they “refer” to the world in a particular way, that is, by capturing for example a pattern in the complex flow of human interaction. As such, it is the (social) structures governing human interaction that we must look at to understand the meaning of terms used to talk about human interaction.

It is in this spirit that the present discussion of methodology now proceeds.

2.2 Wittgensteinian Structuralism

Drawing from the works of the philosopher Ludwig Wittgenstein, I will articulate a Wittgensteinian structuralist methodology. I will recount a version of the Wittgensteinian story of the *social nature of meaning*. With an eye on understanding the capabilities of the human being as a historical actor, the accompanying or implied theory of the nature of human being as a particular kind of a social

and intellectual being (that is, as a pragmatic being) is made explicit. This is developed with some help from some aspects of Michel Foucault's work.

2.2.1 *Social Nature of Language and Structuralism*

In Wittgenstein's view, language is *acquired* and *used* in a social context. The meaning of this well worn out phrase can be brought out by saying that what is acquired is an ability to *participate in* the conventions and practices of the community as engaged in by the fellow participants. We may thus say that the novice is *initiated* or *socialised* into the way of life of the community: one learns to 'play along' with the community by acquiring its language and learning to participate in its "form of life" (Wittgenstein 1958, §19., §23.).

In this process language use and actions *intertwine*. We are not considering the use of words only, but, rather, we look at things *holistically*: in the acquisition and use of language we are dealing with a form of life that comprises talk, thought and action, as well as various forms of material culture (e.g. artefacts) that are made use of in the course of the activities¹. Following this Wittgensteinian reasoning, we are thus well, and naturally, led into the domain of traditional sociological and historical analysis, namely, in the domain of social institutions, practices and conventions.

Furthermore, talk, thought and action relate to 'purposes' for which we engage in them. The term 'purpose' should be understood in a broad and loose sense. It is not intended to imply explicit goal-orientated mentality — goals etc. may be, and often are, conceptualised in a variety of ways, or not explicitly at all, by different individuals. However, the term *is* suitable because we want to emphasise the *concerted and organised* nature of social interaction. Social coexistence is essentially interactive and rule-governed by virtue of the fact that in it people come together to do things together, to understand and be understood by others. Such things are possible only within rule-governed systems. Being concerted, organised, rule-governed, implies being purpose-orientated in a loose sense. The prominent Wittgenstein commentator Peter Winch speaks of this kind of organisation of human life when he says that "[p]eople could not disagree

¹It may help the reader to know the intellectual background to this statement. Characteristic of many traditional philosophical theories of meaning is that they are interested in language as a tool of statement making, or of describing, or of making reference to the world. By contrast, one of the virtues of the Wittgensteinian approach is that it looks at language as a kind of a tool used in the frame of human interaction. This makes Wittgensteinian ideas particularly attractive for a social scientist or historian.

about anything at all unless they also agreed about a great deal: if about nothing else, at least about the application of the rules governing the use of the language in which they talk about their disagreements" (Winch 1956, p. 30)². As Winch points out, that a form of agreement is required even to make sense of disagreement shows how being rule-governed is an essential feature of social coexistence and interaction.

By contrast to Winch's emphasis on structures both as constraining individuals but also as *enabling* social interaction, Emil Durkheim's classic take on social facts (in Durkheim 1982, Chapter *What Is a Social Fact?*, pp. 50-59) conceptualises societal structures primarily as *constraints* on individual action. For Durkheim, the distinctive thing about societal structures is that they impose *external constraints* upon individuals: "[a] social fact is identifiable through the power of external coercion which it exerts or is capable of exerting upon individuals", Durkheim points out in more places than one (Durkheim 1982). He chooses this emphasis possibly because his apparent concern to counter overt individualism. Pointing this out about Durkheim's views is not to say that structures would not in some sense pose external constraints on individuals³, but rather to point out that perhaps Durkheim's emphasises on constraints serves to obscure another important point about structures, namely, that they also *enable* social interaction, and in fact are necessary for ordered social interaction. We will return to this point later when we discuss Michel Foucault's notion of power relations. This notion too draws attention to the institutional frame as *implicit* in its structuring and enabling human interaction.

It is this organised nature of social institutions, practices and conventions that give us the key to the nature of Wittgensteinian structuralism. Social institutions can be seen as *structures* around which we organise our interaction. While we perform and sometimes even transform them, structures often are also over and above the individuals in that we are socialised into them in the process which we internalise the possibilities and limitations the structures impose upon us.

²Winch's views on the significance of Wittgenstein's philosophy to social science are articulated at length in the classic *The Idea of Social Science* (Winch 1980). Winch 1956 is a handy summary of some of its main points.

³In this connection it should be noted that Durkheimian externality of rules also links with the issue of normativity of rules, in particular, the issue of the source of normativity which in Wittgensteinian literature is conceived to lie in the continually evolving practices, and not e.g. in individuals' grasping of a rule nor in the meaning of the rule conceived as external to the practices in which it is acted out.

Many Structuralisms

Structuralism is a term with a prominent history in social science and thus some consideration should be devoted to making a couple of aspects explicit in terms of which Wittgensteinian structuralism differs from some other structuralist positions out there.

The prominent American sociologist Talcott Parsons makes an explicit reference to biological systems as setting the example for social structural systems (Parsons 1948, e.g. p. 158 and in *passim*). This comparison invites particular connotations as to the nature of structural systems. As Anthony Giddens puts it in his account of certain historical forms of structuralism: “[s]tructural analysis ... is considered to penetrate below the level of surface appearance” (Giddens 1979, p. 60) analogous to how a certain for example physiological structure underlies the various forms that particular biological beings can take, a comparison made explicitly by Parsons. Similarly, grammar can be seen as articulating something deeper lying below the surface of the impurities of everyday speech. As the review in Giddens 1979 of different structuralist theories points out, structuralism was indeed prominent in linguistics in the work of e.g. Ferdinand de Saussure. Giddens further argues that a certain positivist attitude to structure is characteristic of, for instance, Ferdinand de Saussure’s and Claude Lèvi-Strauss’s structuralism: structures are something unchanging and universal underlying the world of particulars.

Wittgensteinian structuralism, by contrast, implies a certain *pluralism*: the structures we (as academic but also as lay persons) use to make sense of the social world around us are many, more or less extensive, are often simplifications and can be seen as reflecting interests at hand. Wittgensteinian structures, on the one hand, order the various forms of social co-existence and co-operation and, on the other hand, help us make sense of the social reality, both of which are a varied and pluralistic phenomenon. In other words, human interaction is organised around various kinds of conventions, from table manners to political systems, and each of them we can treat as a structure. A related observation may be made of another classic structuralist, Karl Marx. The details of his theories need not concern us here, but in general terms we may note that in Marxian thought explanations of dynamics in the social world emphasise society’s *socio-economic structure* together with its mode of production with associated forms of social organisation. Now, in the Wittgensteinian view, there is no need to constrain us

to an analysis of the socio-economic structures only, but by structures we may also mean structures such as gender or sex (as e.g. in Foucault). In this essay, however, as we will see later on, the notion of socio-economic structure will play a prominent role.

Another way to approach the issue of pluralism of structures is to see that structures are socially produced and maintained. As such they change and are in a constant flux which counters the traditional structuralist allusion to structure as something universal and underlying. This is an issue well recognised and popularised for example by David Bloor (1997) and other well-known Wittgenstein commentators, such as Peter Winch (1980). Giddens refers to the issue as *duality of structure*: “rules and resources are drawn upon by actors in the production of interaction but are thereby also reconstituted through such interaction” (Giddens 1979, p. 71). In other words, there is a “mutual dependence of structure and agency” (Giddens 1979, p. 69).

Giddens distinguishes duality from *dualism* of structure and action. That is, he argues that the traditional structuralist contention that the relationship of structure and action is not symmetric but one where *structure determines* action, consciousness and the like, is inadequate. To explicate the true nature of this relationship, Giddens develops at length the notions of discursive and practical knowledge, that is, the agents’ discursive ability to articulate or describe social systems (e.g. in language) and the practical ability to participate in them in a tacit way that cannot necessarily be articulated by the agents. His aim is to develop a version of structuralism where the relationship between structure and the agents’ actions, consciousnesses and the like, is conceived as reflexive: one affects the other and vice versa, or rather that one *is* the other. Staying true to his conception of duality he argues that we may be interested in social system in two ways: (1) by way of an institutional analysis of these systems as “chronically reproduced” frameworks of rules, and (2) by way of an analysis of strategic conduct of members of social systems as they “draw upon structural elements – rules and resources – in their social relations” (Giddens 1979, p. 80). In other words, Giddens attempts to conceal the structuralist point that social systems influence individual agency and consciousness with the individualistic point that individuals are able to reflect upon and transform social systems. This is the idea with the notion of performativity: social systems are performed (i.e. participated into) by intentional agents capable of deliberation and reflectivity, yet the structures that they

perform transcend their individuality in that in order to co-operate with other individuals they must submit themselves to shared structures of interaction.

Preserving Giddens', and others', central insight that institutions, practices and conventions are socially *performed*, there is still space to argue that the degree to which the performance is acknowledged, and the powers of the members to change institutions explicit (to them or from a more analytical point of view), is an empirical question. It is plausible that, as we survey the various structures that we see at work in the social world, some of them exhibit cohesion and their members implicit, unquestioning adherence to their mores, whereas some others may appear more fluid. The most interesting structure for the present purposes, the socio-economic structure, is here looked at in ways that emphasise its determining force over individuals. I will argue below that *by and large* we take many features of our socio-economic environment as given and operate within the possibilities and limitations it constitutes. Furthermore, such institutions are large scale processes performed by millions of human beings through various tasks in their everyday lives which in many ways puts these institutions practically beyond the transformative capacities of individuals and even large groups of individuals. As such the socio-economic structure of our society has a significant determining force over us, in particular, in what comes to our behaviour in the natural environment – this is the main contention of this essay and it will be developed further below.

Let us then sum up the two features discussed here that characterise Wittgensteinian structuralism and distinguish it from some other forms of structuralism. First, there is a *plurality of structures* deriving from the various levels of organised, rule-governed nature of human interaction. Importantly, these allow for various ways of conceptualisation by the participants themselves as well as the external analyst, e.g. the social scientist. Second, it is an empirical question how much in a given case these structures determine individual action, consciousness and the like and in what ways, and to what extent, are individuals (both as individuals and as groups) able to transform social systems.

2.2.2 *Wittgenstein and Foucault*

A curiously similar picture to Wittgenstein's of the social reality emerges in Michel Foucault's work. This can be seen by consideration of one of Foucault's key notions, that of "power relation" (treated e.g. in Foucault 1982). Contrary to

what is perhaps implied by the term itself, these are not relations between individuals where one *explicitly* oppresses the other, that is, where one makes the other yield to one's will, or where one is the subject to someone else's exercise of power. Rather, power relations are structures that *constitute the social reality*. Various notions designating different types of social roles — like father, mother, teacher, wage-labourer — imply or are power relations: they constitute the frame in which human beings live their lives which has an effect on individuals' conduct. This frame gives individuals roles to adopt, goals to strive for and so forth. (For a brief interpretative account on Foucault's power relations stressing these aspects, see Butler 1997, Introduction.)

It is thus *not* that one is forced (perhaps against one's will) to these power relations. Rather, any form of social organisation comes with the associated 'baggage', that is, the structure around which that form of life is organised — this point was explicated above by reference to Peter Winch's work. Naturally, explicit forcing of someone to someone else's will also occurs. The observation that we are here most interested in is, however, that such 'forcing' may occur implicitly, by being incorporated into the structure of social interaction. Of course, the verb 'to force' may seem inappropriate because by considering social structures as ordering social interaction we are dealing with structures that to the members of these societies often seem like a natural frame in which we should live our lives.

Now, as far as I can see, Foucault does not develop his picture out of anything like an 'axiom' about, say, the nature of language or the human being, as is distinguishable in the Wittgensteinian view. (In the Wittgensteinian view, the observation that language is used and acquired in a social environment can be seen as an 'axiom' upon which a lot of the theory builds.) Yet, in Foucault's work, some of the implications of this view are worked out better or more explicitly as compared to Wittgenstein's work.

In particular, I have in mind Foucault's development of a historical methodology in his paper *Nietzsche, Genealogy, History* (Foucault 1977). Foucault discusses there three "Platonic myths" about what history as a science and its object of research have traditionally been conceived to be like and how these aspects are subjected to a Nietzschean/Foucaultian critique. One of these myths concerns the idea of history as a development of an idea as if it was something outside or over and above the various historical guises in which the idea has appeared. An

idea is talked about as if it was an *ontological* entity⁴. This is related to another Platonic myth, namely, that of the historian taking him or herself to be studying ‘reality’⁵ as it was at some historical moment. As will be explained below, for Foucault historical reality (or ‘contemporary’ reality, for that matter) and the existence of an idea are far more ‘relational’ matters given shape by the actual form that human interaction takes in a social context.

In contrast to the picture giving rise to the Platonic myths, Foucault casts history as happening in a space that is a kind of a no-man’s land. Let us try to articulate this difficult metaphor. Foucault argues that history is a “play of dominations” (Foucault 1977, p. 148), a struggle of forces. We can understand this as a historical process in which various interest groups, or other power brokers, as well as existing structures clash or interact — much like, say, political parties debate issues in the parliament. The historical process of the development of an idea — Foucault calls it “an emergence” or genealogy, following Nietzsche — is a kind of no-man’s land in which *forces clash* leaving the product of the process a mixture not really owned by anything or anyone nor having thus a determinate identity: “no one is responsible for an emergence” (Foucault 1977, p. 150). Hence also the denial of ‘reality’ pertaining both to the process of play of dominations and the products of the clash.

Foucault claims that the “relationship of domination is no more a “relationship” than the place where it occurs is a place” (Foucault 1977, p. 150). This means, as we saw above, that just as the place where conflict occurs is a no-man’s land — that is, a place that no one occupies and thus controls in terms of what is produced in that place — so too the relationship is not one where there are ‘relatees’, i.e. a relationship where someone dominates some other.

In sum then, history, we may say, is thus like a (bad) compromise and its products are of the according kind: history is a process to which various parties contribute giving rise to a creation that does not really correspond to any one’s intentions or vision. In other words, the logic of historical change that Foucault proposes here is alike to what we can imagine happening in a process of what we call brain-storming. In a group of people someone tables an idea to which others contribute gradually shaping and transforming the idea in a variety of ways.

⁴This idea is made explicit by historical examples and criticised, but not made in reference to Foucault, in Skinner 1969.

⁵The word ‘reality’ is here bracketed not to discount the notion of reality but to indicate that Foucault uses the term in a somewhat extraordinary sense. This sense is explained below.

The end result is a kind of a 'no-man's idea': its ontological status is unclear, that is, it did not exist before the brain-storming and even as it now stands it is a mix of contributions, a mix of which no-one really is responsible.

I take Foucault's notion of power relation, and the interpretation given of it here as 'no-man's land', to incorporate an essentially similar message to that of Wittgenstein's: the social environment is essentially relational, or interrelational, in that it is characterised by human interaction, as are its products, for instance, human intellectual (e.g. political) and material life. The common denominator is this. When any given idea, a political theory say, is introduced to the wider public it must be institutionalised or somehow else incorporated as part of the everyday flow of activities. It is in this process that the idea gains practical meaning by beginning to make practical difference in people's lives. It is in this process that *the meaning* of the idea is given shape to. It is a process whereby the idea becomes a part of the structure of social interaction for the idea enables a form of, or is a tool used in, interaction.

It now becomes obvious that that these ideas tie with what is referred to as *finitism*. In opposition to e.g. certain philosophical theories about meaning, the 'finitists' hold that meaning is not an independent metaphysical entity nor a mere (individual or collective) disposition to act in a particular way in particular circumstances⁶. Rather, meaning is a product of social interaction and shaping of human practices. As such the shaping process is also open-ended, hence the term finitism: the reach of any formulation of a rule or meaning is finite as in the course of the shaping process the meaning may change or the original formulation become inadequate or otherwise problematic.

2.2.3 *Picture of Human Being*

A particular kind of a picture of the human being as a social and intellectual being emerges out of the foregoing Wittgensteinian and Foucaultian considerations. This will be of interest to us as a consideration of the conditions, motivations and capabilities of the human being as an actor in historical shifts, events and phenomena.

In short, we are cast as products of our times. To be more exact, we are socialised into a form of life that we adopt and in the frame of which we live our lives. This

⁶For a classic account of finitism, see e.g. Bloor 1997.

does not *necessarily* imply that we are mere ‘zombies’, uncritically and unreflectively living the form of life. While of many of us something like this may be true — if not of all of our lives then of areas and times in it — this is not an interesting argument to make and in many cases it probably is an over-simplification. (Yet, there is some truth to this that I will return to shortly.)

Rather, we may argue that, critically or not, somehow, be it an individual’s vision or more generally ‘an idea’, they must be *acted out* on the level of forms of life. We may employ the aforementioned idea of the Foucaultian no-man’s land to articulate this: on the level of forms of life in the frame of existing societal forms, ideas, individual consciousnesses and so forth, come together, clash and produce an interrelational whole.

Crucially, if the foregoing is right, the production process itself cannot be seen as an emergence of an idea, or as a development of an idea, but rather as an *interplay* of various factors (this is the idea behind the aforementioned Foucaultian ‘denial of reality’). What individuals think and bring into the mix is only a part of the story: the scope of the analysis is thus broader than comprising the individual, his or her ‘consciousness’ and the like, it looks at the *temporally extended interaction* of individuals. As social beings, this is also the field in which we live our lives. We must thus be seen as navigating in the social reality, a kind of space, a social space.

Pragmatic Being

Let us now return to a point briefly referred to in the previous section. While we cannot dismiss the human being as a zombie parroting existing mores, there is a related sense in which the human being is a product of his or her society and times.

We want to cast the human being as a pragmatic being in two senses. On the one hand, from the point of view of a single individual the societal frame in which we live appears as an indubitable fact that we often cannot fight but must accept as a limiting (but also *enabling*) condition to our activities. Furthermore, it often appears to us natural, and right, that we have certain institutions, practices and conventions around which we organise our lives. Surely, there are examples of dissent against these systems — and such dissent is important. Yet, by and large we adopt the existing societal frame, or aspects of it, without complaints: we internalise the limitations and possibilities it provides and steer our actions

accordingly. This is not necessarily a weakness, but often a social necessity, for how otherwise would a social being organise his or her life if not around social institutions.

This leads to, or implies, the second point. By and large human beings are often first and foremost concerned with somehow coming to terms with the social environment in which they find themselves. What forms this actually takes is an empirical question, but to give an example of the kind of thing we mean, we are to varying degrees occupied with, say, getting an education, a job, making a career and the like. We also want social acceptance. All of these are achievable (only) in a societal frame or structure, that is, we may say, by submitting us to a power relation. Our actions are given direction, and meaning, by the societal frame in which we operate without which our actions would be meaningless which exposes our dependence on these structures. It is thus hopefully clear that we do not want to cast the human being as a zombie parroting existing mores. Rather, we describe the condition in which we find ourselves by virtue of us being essentially social beings leading lives in an interactive societal frame. In what follows, I take these two points as a guide when reading history and seeking explanations to historical changes, and ultimately, when seeking an account of the human/nature relationship.

It may seem like we are here developing a quite essentialist picture of the human being. We may seem to be using the term 'human being' as if it referred to some universal essence of the human being. However, if there is an essentialist claim implied in this essay then it is that the human being is essentially a *social being*: we are from birth on surrounded by other humans and learn to interact with them. This is our mode of existence. As argued above, just as being rule-governed is a precondition of the possibility of social interaction, the human inclination or ability to participate in rule-governed interaction is a precondition of social interaction. Relatedly, we are not imputing the human being with particular forms of consciousness, beliefs or anything like that — these are empirical questions. Unlike Merchant's, as we will see later, our picture of the human being is in a crucial way *non-intellectual or non-reflective* — not necessarily across the board, but often in what comes to certain features of the societal life's sphere of the modern human being we are non-reflective. That is to say, the human being tends to adhere to normalcy constituted by some general features of the societal frame in which they grow up and operate. To repeat an important point, in many respects we are not 'judgemental dopes' when we operate in the everydayness,

but also, to an important extent, we need a framework of one kind or another in order interaction to be possible. Again, this should not be seen as (political) conservatism of the human being, but as a precondition to organisation of human life as social complexes.⁷

In the next chapter, I first explicate the socio-economic and industrialised societal structure within which environmental problems are caused and in which we conceptualise and address them. This is intended to illustrate structurally the sphere of life and concerns of the human being as a pragmatic being and how his or her actions in this structure relate to environmental problems. I then present a picture of the historical emergence of modern society, that is, of the emergence of the socio-economic industrialised complex in the frame of which the pragmatic being lives and acts in ways that have ecological implications. Finally, the structuralist account is contrasted with Carolyn Merchant's rival account of the background to human ecological conduct.

⁷The philosopher J. C. Nyíri (1982, 1976, see also Bloor 2004), cites extensive biographical evidence that as a person as well as in terms of his intellectual influences Wittgenstein was a conservative. Historically, conservatism was a response to upheavals such as the French Revolution, and in Wittgenstein's case, the collapse of the Austro-Hungarian Empire. Arguably characteristic of Wittgenstein's work e.g. in what comes to his insistence that meaning relies on conventions, it is typical of the conservative attitude to insist that reliance on existing authority and conventions is a necessary feature of social existence. However, adherence to the conceptual point that social organisation is by definition interactive and must thus be a rule-governed convention, does not necessarily imply that the forms of social organisation must derive from some existing tradition. The above quoted passage from Peter Winch, I think, implies this point in that even disagreements (say, about adherence to some tradition) imply an agreement about at least some terms in which the disagreement can be articulated.

CHAPTER 3

Making of Modernity: Nature and Society

I begin with an examination of a report by the *World Wildlife Fund* (also known as the World Wide Fund for Nature, henceforth WWF) on the state of the natural environment today. We will see there a number of issues pertaining to the socio-economic structure of modern society lying in the background of our environmental problems that come to the fore. This gives rise to a particular picture of the nature of modern society in terms of its contribution to its environmental problems. In the section after that, the historical emergence of some relevant features of this picture is illustrated my aim being to show how the notion of modern and advanced society is historically tied with its particular socio-economic and industrial structures. In the final section, the account of how the modern society structurally contributes to its environmental problems is contrasted with a rival account.

3.1 Modern Environmental Issues

In this section we take a broad look at the nature of some of the modern environmental issues. My aim is to illustrate the nature of the phenomenon showing that it may fruitfully be approached by way of a structuralist analysis of modern society. The WWF report can perhaps be argued to be only one of the many alternative articulations of the nature and solutions to environmental problems. Time and space permitting, it would perhaps be useful to look at some alternatives. For the present purposes, however, the WWF report may be considered reasonably representative of a cross-section of environmentalist, public and political views.

A report published in 2006 by the WWF titled *Living Planet Report* (WWF 2006) argues that the world's natural resources are used up at a faster pace than they renew; currently exceeding this capacity by 25 percent (WWF 2006, p. 3). This is referred to as the Ecological Footprint. The report's other focus, the Living Planet Index, indicates a "rapid and continuing loss of biodiversity" the world having faced the extinction of about a third of its vertebrate species since the 1970s (WWF 2006, pp. 4-5). The report also draws attention to the need to cut carbon emissions (accounting for 48 percent of the Ecological Footprint), and in general, to cut overconsumption and waste generation. The consequence of malpractice is loss of biodiversity but also habitat destruction and degeneration that will eventually amount to a threat to human well-being. This we may take as a reasonably good characterisation of the kind of environmental problems the modern society faces.

From the present perspective it is important to identify the factors contributing to the aforementioned problems. Speaking of the need to invest in countering the aforementioned trends, the report argues that "[l]ong-term investment will be required in many areas, including education, technology, conservation, urban and family planning, and resource certification systems, along with the development of new business models and financial markets" (WWF 2006, p. 22). The report lists five issues that need addressing. First, the size of human population, which is influenced by e.g. family planning policy, education policy and health care policy (WWF 2006, p. 22). Second, consumption of goods and services per person, which depends on the person's economic situation e.g. so that he or she is in the economical position to make ecological consumer decisions (WWF 2006, p. 22-3). Third, the amount of resources used in production, which can be influenced by technological means as well as schemes such as recycling at home and by businesses and industry (WWF 2006, p. 23). The fourth and fifth points concern the extending of bioproductivity per hectare and in terms of total area available to production, which may be achieved by improvements in agricultural technology and techniques as well as protection and maintenance of land and waters from degeneration (WWF 2006, p. 23).

Our first observation here is that many of the factors spoken of in the report are *structural factors* about modern society: change is sought, for instance, by means of urban and family planning as well as by development of new business models and financial markets. These are structural factors that affect the life of large masses of people by changing the structure in the frame of which they operate.

The significant players are identified to be politicians, engineers and scientists, businesses, industry, and individuals as consumers. The conduct of the last three is to be transformed towards an ecologically sustainable direction. In this process, engineers and scientists are to develop technologies and know-how to facilitate the transformation, together with politicians who are to create favourable political conditions making these kinds of developments possible. We may thus say, that while a transformation is sought, it is built around the activities of relatively old societal elements.

The second observation we make is then this: the existing societal frame embodies the 'fields' on which environmental problems can be addressed and changes made. These fields include science and engineering, political institutions, industry, business and economy as well as the consumers. In other words, it is in this structure that the problems appear and by the means of which it can be addressed. Here, it might be said, we see the Foucaultian power relation concept at work. It influences both the way we conceive of environmental problems (i.e. as threatening the stability of our institutions and therefore human well-being) and the means we have at our disposal to address it (i.e. the different fields).

Thirdly, one thing strikes us as missing. There is no mention of us changing our managerial, exploitative attitude towards nature, this allegedly being a major factor behind human exploitation of the natural environment, and thus our environmental problems, according to a number of ecologically concerned writers such as Carolyn Merchant (1980), Clarence Glacken (1967), Morris Berman (1984) and Donald Worster (1994). The issue does not really enter the radar screen of the WWF in the first place. It is interesting to speculate as to the reason, and it is here that the present work could hopefully cast light.

By a managerial and exploitative attitude to nature is meant the tendency to regard and manage nature as a resource to human well-being (Merchant 1980). This attitude is visible in the report, for it after all places great importance on extending the biocapacity per acre and extending the acreage available for agriculture. In other words, it speaks of managing the natural environment technologically, both of which hardly signal, for instance, emotional attachment to the natural environment (something emphasised e.g. by Merchant and considered in more detail in the final section of this chapter). They rather signal a certain managerial ethos.

It may then seem that the analysis of Merchant and other similarly minded scholars hits the mark. Yet, I think their argument must be deepened in a crucial way. This relates to the second observation made above: ‘techno-rationalism’ is the mode in the terms of which we tend to think about environmental issues, and the WWF report exemplifies that. But then, this is itself explained by the fact that the WWF report is written under *particular socio-political conditions* prevailing in the modern industrial society. For instance, the main problem is identified by the report as that of needing “to find ways for the average person to live well on less than half the current global average footprint” (WWF 2006, p. 28) and the means to tackle it are identified as political and technological. These reflect the nature of modern society and only secondarily a managerial ethos. Or to put it better: we adopt a managerial ethos towards our environmental problems because of the societal frame in which we act.

We see also that a key factor against which the feasibility of political and technological action is measured are a number of facets of human well-being. In the background, receiving various degrees of emphasis and articulation, loom the concern for a number of aspects of human well-being as well as the concern for biodiversity and preservation of the natural environment, or the preservation of “a portion of the Earth’s productivity for the use of wild species” (WWF 2006, p. 26) as the report puts it. These aspects constitute a body of evaluative considerations that formally inform the direction of the transformation process. In one sense, it is quite natural and virtuous e.g. for politicians to be interested in general human well-being, yet, we must define what factors influence human well-being, for the definitions like this are *historically situated*, which in this case means that the definition reflects the societal structure in the frame of which the definition is asserted.

One aspect of the definition is the concern for a basic material well-being, improvement of which is a particular issue for the world’s poor and recognised by the report. For another aspect, consider this passage from the WWF report:

Cities, nations, and regions might consider how *economic competitiveness* will be impacted if *economic activity* is hampered by infrastructure that cannot operate without large resource demands. (WWF 2006, p. 28, my emphasis)

[Risks] must be considered in concert with the *economic costs* and potential *social disruptions* associated with [measures taken]. (WWF 2006, p. 5, my emphasis)

The passages speak of economic costs and decline in economic competitiveness of a nation and, while the connection is not made explicit, it is clear that social disruption follows decline in human socio-economic well-being, meaning roughly speaking, for instance, problems with access to sources of livelihood, such as availability of employment. The second of the quoted passages in particular notes that transformation towards ecological sustainability is likely to come with associated socio-economic costs.

The foregoing analysis of the WWF report indicates the nature of the frame and its implications to environmental discourse. In modern society, the various meanings of the notion of human well-being (e.g. its material and socio-economic dimensions) have become associated with certain features of modern industrial society, maintenance of which seems like a prerogative to us, as well as our political decision makers, and associated interest groups. The point is, that while writers like Merchant may be right to point out the dominance of mechanical thinking in our culture and society, at least as much attention should be paid to the social frame in which human beings think, talk and act, for it is that frame that affords the available lines of conduct, leads to environmental issues, and in the most immediate sense constitutes the life's sphere of the pragmatic being. In fact, the maintenance of these facets of human well-being are necessary for the continuing existence of modern society as we have it. This is to say, things like a working, vibrant economy is essential to the survival of modern society and the well-being of its members.

It is these aspects then whose history we must trace next. How did in particular the socio-economic concerns become a structural feature of modern society? We will address this question in the following section.

Before going there, it should be made apparent how the discussion here links with the materials discussed in the methodology section. The Wittgensteinian notion of form of life understood as a complex of Foucaultian power relations can be used to illustrate the nature of modern industrial society. This was done here by illustrating the prerogatives the socio-economic frame places on political and other relevant decision makers when they think about environmental issues and how to react to them. The significance of taking the Wittgensteinian notion

of the human being as a pragmatic being seriously is illustrated here by the fact that modern environmental issues can be seen as a product of the functioning of the socio-economic industrialised complex, this complex being the frame in which the pragmatic human being 'encounters' nature. This is to say, the human/nature relationship is mediated by the socio-economic industrial frame in which the pragmatic human being lives because it is within this frame, and by participating to this frame, that we engage in forms of conduct with significant environmental impacts.

Having now illustrated the nature of modern environmental issues and their structural societal background, I proceed to review the process of historical formation of modern society, the process in the course of which the structures of modern society relevant to the present argument were gradually formed. This will deepen our picture of in what ways the modern society is essentially a socio-economic complex.

3.2 Some Aspects of the History of Modernity

The historical period that our review here covers extends over a rather large chunk of early modern and modern history, roughly from the 1400s to the 1800s. There is a considerable degree of arbitrariness involved in this selection. At once it should be made clear that only rarely, if at all, is historical change a jump from one state to another, and that the seeds of changes taking place in some period can often be seen as having been sown well outside of the period itself, potentially going very far back in history. Any selection of a period of study is thus in a sense an oversimplification and reflects the interests at hand. Regarding the shape and extent of the historical portion of the projected PhD study, there is no reason why the study period could not reach up to the present day. For the purposes of this MSc thesis, however, the scope is for pragmatic reason kept narrower.

Geographically our area of interest is Western Europe. It is certain Western European countries, such as France and England, that gradually emerged as the first modern nations first overtaking and then leaving behind, for instance, certain great Eastern nations such as China. They did so by being the first to develop certain societal features often seen as characterising modernisation.

In other words, this period and these areas witnessed what historians have perceived as a number of 'revolutions' that crucially shaped the modern society. That we here speak of revolutions should not be let to obscure, and is not intended to deny, the fact that changes were often gradual and specific to particular areas with particular histories. The term 'revolution' serves here to focus attention on particular events and phenomena in the flow of history and as such implies a selection process by the historian but does not necessarily invalidate the work if we keep in mind the gradual nature of these 'revolutions'.

3.2.1 *Modern Revolutions*

The perceived modern revolutions to be considered in this section all intertwine in a fundamental way. In an exposition of this historical formative process one must, however, begin somewhere, and we shall do so in the so-called *Commercial Revolution*.

By the term 'Commercial Revolution' is usually meant a certain intensification of international trade that took place in the 16th century onwards. A brief historical narrative of this runs as follows.

Trade internal to Europe had been practised since time immemorial and thus the greatest revolution was to be achieved in *international trade* e.g. to the East and later the New World. Various nations took turns to dominate the scene over the centuries while England, or Britain, is often recognised to have been in various ways the leading modern nation by the late 18th or early 19th century. The historians Ann Carlos and Stephen Nicholas summarise a number of important points that made England, and Britain, the leading modern nation when they say that "[a]lthough England already had a sizeable textile trade with Europe, the Restoration [in the 1660s] saw a movement into what have been called the "distant trades"." By 1700 one-third of England's imports came from North America, the West Indies, and the East; these imports and their growth over the ensuing century made England a world entrepôt" (Carlos & Nicholas 1990, p. 853). (In Rapp 1975 we also find, however, the argument that to a degree the Commercial Revolution included shifts in domination within European internal trade, the English for instance gaining ground in trade to the Mediterranean.)

In the early 16th century, trade between Europe and the East, was controlled by the merchant town of Venice along with a number of other Italian cities. Venice was the main importer and distributor of Eastern products to Europe (Hammond

& Hammond 1966, p. 19), a so-called *entrepôt* (Rapp 1975, p. 501). A long conflict with the Turks in the 15th century fundamentally weakened Venice who gradually lost its position as the leading merchant power in Europe. Venice was also subject to a brain-drain of technique and technology as skilled craftsmen (e.g. glass makers) were lured to other countries together with the craft they mastered (Rapp 1975).

Early on the Dutch boasted a relatively modern society with a well-connected network of commercialised towns (such as Antwerp, Utrecht and Amsterdam) and a relatively free social environment. This basis made them a significant player in European and later in international trade competing with the Spanish and the Portuguese e.g. in the East. (Rostow 1975, p. 108) By the 17th century, they had become a major *entrepôt* of northern European and Mediterranean goods, as well as British wool and cloth to European markets. They were also an *entrepôt* to goods from the Americas as well as Asia. In particular, they “organised the carriage, financing, and redistributing of this trade, processing some of the commodities in transit” (Rostow 1975, p. 110).

The Spanish and the Portuguese took advantage of the Turks cutting overland trade connections to the East in the 15th century, a challenge which the Portuguese overcame by the discovery of a maritime route to the East around the African continent. Other discoveries followed, e.g. that of the Americas, that gave the upper hand to the Spanish and the Portuguese nicely placed of the Europeans to handle traffic crossing the Atlantic Ocean as well as to the East. An often noted factor stimulating developments in world economy was the influx of bullion from Spanish and Portuguese enterprises in South America into Europe.

The English, or later British, were relative latecomers to the scene yet they are usually recognised in many respects as the leading modern nation by the late 18th or early 19th century. The British developments thus deserve a more detailed look. In no particular order, following is a rundown of some factors contributing to the British rise to a relative superiority.

Summarising a number of important aspects, the historian James Walker writes that “[i]n eighteenth-century Britain there were ample opportunities to make increased and cheaper production worth while”, for there “the market, capital, transport and labour needs of producers [were] adequate” (Walker 1968, p. 7). Let us break down the various factors to which Walker draws attention in that passage.

Certain geographical features of the British Isles are often cited as a factor in its development. Isolated as an island from the continent it tended to suffer less materially from wars. Surrounded by water, it had an excellent medium of transportation at its disposal. Importantly, its coal and iron resources happened to be close to each other and close to the coast or along navigable rivers so that they could be easily exploited and distributed. Some other nations had to wait until the age of railway before their vast inland resources could be tapped onto and distributed in an economical way. (Walker 1968, p. 4)

The British societal structure was in important respects rather modern already very early in the pre-modern period. This argument is developed in a very interesting and nicely argued paper by the historian and sociologist Derek Sayer. Sayer's argument basically is that "English state formation, over the very *longue durée*, molded a civil society in which capitalist economy was possible. Critical in this was the early unification of England as a national state" (Sayer 1992, pp. 1410-1). There are a number of aspects to this, only some of which are mentioned here.

First, the English aristocracy was an interesting mix of what e.g. in France were separate classes: "[t]hey farmed for profit, speculated, invested in colonial ventures, exploited coal and iron deposits on their lands" yet also "lived on country estates, rode to the hunt, and administrated their counties ... in ways that were abidingly patrimonial and deeply rooted in tradition" (Sayer 1992, p. 1385). Thus, while e.g. in France the landed and the aristocracy were not very interested in business, industry and economic development of the country, their English counterparts were. Relatedly, further describing the nature of English aristocracy, Marxist "[a]ttempts ... to find ... a protocapitalist "rising gentry" confronting a moribund "feudal" aristocracy have long ago been discredited" (Sayer 1992, p. 1389).

Second, England's political system was comparatively centralised very early on (under William the Conqueror's rule from the 1030s to 1060s) and urban centres lacked autonomy which translated into "a quite remarkable precocity in the development of national agencies of administration and justice". "In their form" these agencies, however, "did not fit [the Weberian] rational-bureaucratic ideal-types, and their lack of fit has been what is most enduring and characteristic about them". (Sayer 1992, pp. 1384-6) Nevertheless, they provided economically significant sections of the nation a shared and mutually respected institutions in

the frame of which to act and solve disputes. (Sayer notes, however, that the access to political participation was still significantly “differentiated by gender as well as by class” (Sayer 1992, p. 1398).)

In other words, in England we find important ingredients of a comparatively compact and functional nation-state before much of Europe in that those classes that came to count in the modern Revolutions were not fundamentally opposed to each other (but to some extent rather amalgamated in one and the same class) and had a comparatively fixed national frame in which they acted.

Leaving now England and Britain for a while, let us look at some more general and abstract factors in the shift from pre-modern to modern Europe.

Max Weber famously proposed the notion of a *Protestant Ethic* as partly explaining the Western rise to modernity. In Weber’s account, while he admits that the impulse to commerce and trade is nothing new in world history going back to the earliest time, the capitalist ethos is characterised by, first, deliberate organisation of labour and, second, by production beyond the needs of oneself or one’s community that looks instead at the favorable balance of income and investment (Weber 1930, p. 17 ff.).

Weber’s account seeks to explain this shift by reference to then emerging protestant outlook on life. In particular Calvinism is singled out as the most rigorously pursuing the ethos of being God’s chosen one. According to Weber, in the Calvinist thought the status of being God’s chosen one could be achieved by success in this life. Success was identified with business success.¹

Relatedly, the historian Jack A. Goldstone also argues that “some states emerged from the 17th century crises overtly tolerant of internal diversity and innovation” (Goldstone 1987, p. 127), England being the leading nation in this respect. His argument concentrates on the claim that “the radical challenge” to the Crown in the troubles of the mid-17th century, while it eventually resulted in the restoration of Monarchy, “left a legacy which served as a hedge against the reassertion of absolute authority” (Goldstone 1987, p. 130). Somehow these dramatic times

¹Whether this in fact is faithful to the Calvinist ethos has been disputed (Weber 1930, See Giddens’s introduction, p. 11). Also, the economic historian Jack A. Goldstone argues that even given the ethos towards commercial success, the conditions in which e.g. investment business was conducted in the 18th and early 19th century required significant risk taking: the conditions were such that success could be achieved only by taking risks. Goldstone then goes on to argue that because of the risky business climate, a Calvinist business man would not actually have engaged in the activities that he did (Goldstone 1987, p. 121).

left a long lasting mark in the British psyche. It translated, Goldstone claims, in a certain kind of a *spirit of innovation*. This spirit of innovation was a factor in catapulting Britain into modernity as the leading modern nation in the world.²

In the second half of the 18th century, Britain, along with most of Europe, experienced what is called a Demographic Revolution. According to the historian James Walker, the reasons behind this are complex but a major factor is that of a more efficient distribution and simply a better availability of food. Walker attributes these to good harvests from the 1730s onwards and improvements in agricultural technique. (Walker 1968, p. 9) The French were the biggest competitor to the English in the 18th century (Rostow 1975, p. 113), but in Britain the population grew proportionally faster than in France, a greater proportion of it being urbanised than in France, although the French population remained all the while larger than the British (Rostow 1975, p. 170). Europe, and Britain especially, were caught in a cycle of increasing population matched with trade and production of the means of sustenance, together with an overall stimulation of economy, that further propelled population growth: “[o]nce started the upward movement of population accelerated as it was paralleled by an increase in market demand” (Walker 1968, p. 9).

A significant factor in broadening the base from which agricultural and other produce could be extracted for European use, and to which the expanding population tended to overflow, was the European colonisation of areas outside Europe. As Walker puts it: “[o]ne of the most powerful stimulants to population increase in Britain and Europe was the existence of vast, unoccupied areas overseas” (Walker 1968, p. 9).

Excursion and permanent settlement to these unknown areas was at first a risky business, risks that were combated by giving exclusive monopolistic rights to companies to conduct businesses in particular parts of the globe. Chartered companies combined public and private efforts enjoying a monopolistic right to trade in particular areas but often also undertaking “public duties of government” at the same time (Hammond & Hammond 1966, p. 54). When entering unknown and potentially hostile waters and lands, security was an issue. This could be provided by the state navy if business and industry worked together with it. It

²Despite similarities, it appears that Goldstone’s argumentation goes somewhat against Derek Sayer’s in that for Sayer in England a certain administrative frame had already existed *for a long time* within which it was possible to articulate and solve conflicts in a spirit of tolerance of internal diversity, whereas for Goldstone this was a product of the troubles of the mid-17th century.

is also claimed, however, that despite the risks great fortunes were to be made with a relatively small investment given the funds at the disposal of some British investors³.

Companies also enjoyed the advantage that, being joint enterprises of wealthy investors, they boasted “larger ships, larger harbors, larger cargoes, larger capital” (Hammond & Hammond 1966, p. 54). On the other hand, a problem facing these trading companies operating overseas was the issue of keeping accountable their employees operating in distant lands: “the most serious problem identified by historians seems to have been private trade by managers” (Carlos & Nicholas 1990, p. 855).

The British economy was at first stimulated by e.g. the American colonies, because the colonies were a source of many important raw materials for domestic industries. Also, “[i]f the colonists wanted hardware, woollen [sic] cloth, beaver hats or agricultural implements they had to buy them from Britain”. The colonies, in addition, “were dependent upon Britain for capital, labour and markets” (Walker 1968, pp. 113-4). Later, as the American colonies became more and more economically important, the heavy economic regulation practised by Britain on American exports began to cause discontentment. This is often seen as an important factor contributing to the outbreak of the American War of Independence in 1775 (Walker 1968, pp. 114-5).

In sum, the Commercial Revolution thus created an “expansion of income and population” due to the enlargement in international trade. It was a cycle of intensifying trade raising profits and profits in turn intensifying trade. This meant that a larger population could be supported by foreign food produce that it was now possible to afford and import into Europe. However, the “Malthusian limits”⁴ were going to be reached sooner or later, had not the Industrial Revolution later once more pushed these limits. (Rostow 1975, p. 129) Yet, the Commercial Revolution created a fruitful basis for industrial and technological innovation by expanding population, creating a relatively large consumer market and giving

³In Wolfe 2007 it is pointed out that, while the First New Zealand Company sent a number of ships packed with settlers and equipment from Britain to New Zealand but failed to initiate a successful colony there, the losses sustained in this project to the investors were rather insignificant given the overall volume of their income.

⁴The term ‘Malthusian limit’, or sometimes ‘Malthusian check’, derives from the classic population theory of Thomas Malthus in his *An Essay on the Principles of Population* (1826). According to Malthus, the ultimate factor regulating population growth or decline is the availability of food. This “ultimate check” is usually acted out by diseases, war, and the like, but also other more intellectual, cultural or societal factors such as birth control.

rise to credit and other important monetary institutions that later played a key role in funding industrialisation.

Together with and intimately related to the Commercial and Demographic Revolutions, the so-called Scientific Revolution gradually transformed life in early modern Europe. The Scientific Revolution is a term describing the gradual emergence of a scientific method and development of the natural sciences. It is notoriously difficult to define what the terms 'scientific' and 'science' exactly mean. There are difficulties associated with separating the early 'pre-scientific' thought from later 'scientific thought' as aspects associated with the latter occur already in the former 'era'. Further, the scientific practice is often associated with predicates such as systematic, empirical, experimental, verifiable, falsifiable and so forth but it is also understood that actual practices often fall short on these ideals. With this vagueness in mind, let us proceed with a review of some aspects of the so-called Scientific Revolution.

We use the term 'Scientific Revolution' here to draw attention to a larger phenomenon comprising not only advances made in theoretical sciences but advances made in various kinds of technology and technique. In effect, we will be collapsing together aspects of the so-called Agrarian Revolution (Walker 1968, p. 22) and the Scientific Revolution.

Above it was mentioned how new agricultural techniques and practices gradually changed the production capacities of European nations. The 18th century English farmer Jethro Tull, while "Tull's knowledge of the theory of agricultural science was meager", implemented new ploughing, seed planting and other techniques and innovations that allegedly had the overall effect that "a more thorough use was made of the natural resources in the soil than was possible by reliance on traditional methods" (Walker 1968, p. 30). Tull wasn't by any means a lone innovator. There were a number of other agricultural innovators active in 18th century Britain. (For an account of these, see e.g. Walker 1968, Chapter 3.) Gradually, these innovations allegedly improved the quality and efficiency of agricultural production.

An often mentioned, and related, but a more political rather than an agricultural factor relating to improving agricultural production is that of the enclosure of common lands for private use. Walker says of this:

A pre-condition of farming improvements was that land should be brought into individual ownership. In 1700, however, over large parts of the country [England] agriculture was in the hands of under-capitalised, open field farmers, wedded to customary ways and producing primarily for subsistence. (Walker 1968, p. 24)

Under pressure to support the rising population — or more cynically but perhaps more accurately: attracted by profits to be gained from the growth of markets and better access to them — land previously in common use began to be enclosed and put to a more controlled and intensive use by private landowners. It was of course a controversial development and caused conflict (Merchant 1980, p. 59) but ultimately landed interests prevailed.

Looking for the moment at the specifically scientific discoveries, scientific knowledge was, in general, slow to trickle through from theory to practice. There were a number of difficulties that needed to be dealt with before the theoretical scientist could work together and benefit the engineer who built the actual machines. There was the issue of the limitation of materials: “[w]ood was an unsuitable material to use for gears; ... metals such as iron were impossibly difficult to work except on the small scale, and ... subject to fracture” (Hall 1961, p. 334). These problems were eventually addressed with the help of improved chemical knowledge but “[b]efore the mid-nineteenth century there was no useful body of chemical theory from which useful consequences could be drawn to benefit metallurgy” (Hall 1961, p. 335). Also, “the engineer himself was notably blind to the importance of mathematics” until around the end of the 18th century (Hall 1961, p. 335-8).

It is, however, generally recognised that in particular new materials and sources of power, with the associated technical and scientific know-how, were finally available in a plentiful and economic manner in the 19th century. This concluded a phase in the Scientific Revolution and helped to bring about the Industrial Revolution.

One of the important transformations that is often considered in this connection concerns the shift from the use of water and wind to the use of coal and steam power in industry.

Coal and steam play a significant role as they relate to the issue of transportation. A precondition of the functioning of modern economy is a relatively swift

movement of goods from the areas of production to consumers as well as the movement of goods in bulk, both of which were aided by the arrival of the steam engine. (Hammond & Hammond 1966, Chapter 5)

Use of (steam powered) machinery helped many industries become more and more profitable through reducing the cost of production and by providing simply more power to run larger works. Steam was used, for instance, to power engines that pumped water out of mines, first in use in the early 1700s in Cornwall, England (Hammond & Hammond 1966, p. 111-2). Also, “the application of steam power to spinning and weaving was followed ... by an immense expansion of the textile industries” (Hammond & Hammond 1966, p. 130).

Steam powered machines were of course *pieces of technology* produced by engineering skill and made of iron and later steel (a processed form of iron). As such, the historical development in the importance of steam necessarily coincides with the developments in iron industry and machine making. In Britain, in particular, as the nation’s forests used to make charcoal to power machinery wore out, coal mining and later refining of coal into coke played a role. Relatedly, when the source of power running various machines was still water, the plants had to be placed along a river or stream, whereas the steam engine powered machinery could be placed almost anywhere provided that some type of fuel to run the engine was easily accessible.

Working together these various lines of development reinforced each other: steam engine was made possible and their use economically attractive by improved materials, engineering skill and availability suitable fuels which in turn relied, among others, on transportation and manufacture relying on steam engines. Needless to say, the development of these processes was gradual and often intertwined with particular economical and political conditions.⁵ The fact that these various industries so intertwined often led to the concentration of production in a single geographical location as “it was easy to combine furnace, forge and mill in a single establishment”. And so “[l]arge scale organization became the rule”. The organisation in turn gained considerable political influence and were also able to control prices. (Hammond & Hammond 1966, p. 145)

⁵This is illustrated e.g. by the interesting and detail overview of the 18th century Scottish engineer James Watt and his invention’s changing fortunes in the world of business and engineering in Hammond & Hammond 1966, Chapter 8.

We have then recounted some commonly recognised features in the history of modernity. The general structural features of modern society, whose historical emergence we have here articulated, naturally bear upon the life of the pragmatic human being in that they constitute the societal frame in which the human being acts. With this in mind, I want to now move on to highlight certain social and environmental consequences of the aforementioned Revolutions.

Social and Environmental Implications of the Revolutions

Before the intensification of both international and national trade, human existence was by and large sustained on a local basis: relatively small family, tribe or village units produced what the collective consumed. This would comprise both hunting and gathering and agriculture based food production and similarly for production of tools, weapons and the like. An increase in trade meant a gradual disappearance of the self-sustained mode of existence and that produce began to move around from the areas where it was produced to where it was consumed.

This had the implication that a section or class of people referred to as *wage-labour* emerged and became gradually more numerous, both absolutely and relative to the total population. The existence of wage-labour presumes a method of payment in compensation for the labour power provided which implies developments in the economic system moving from barter to *money economy*. Wage-labour became increasingly associated with commercial enterprise that did not produce for its own needs but for *export, both nationally and internationally*. Finally, the notion of wage-labour relates to *urbanisation* as, unlike in the self-sustaining mode of production, labour is relatively free to move around looking for work beginning often to concentrate in particular areas which gradually formed into distinctly urban areas. In the late 17th century for instance England had reached the situation where the domestic urban population could only be fed with imported grain (Rostow 1975, pp. 119-22).

Movement of goods and people stimulates economic interaction and the society as a whole as producers require e.g. various forms of transportation and distribution of their goods which calls for people to play these roles (Rostow 1975, p. 127). This lead gradually to diversification and specialisation in economy. Also, as production became a commercial enterprise, there was an increasing need for financial services such as credit institutions to fund new investment.

The role of the emerging *nation-states* must be again highlighted in this conjunction. In France for instance, as the historian Norbert Elias tells us, the nation-state emerged out of feudal France as military power allowed a feudal family to assert control over a larger geographical area. However, according to Elias, a military hegemony could not sustain power as allegiances could be formed to eventually overthrow the hegemony. Rather, in this conjunction the emergence of money economy played an interesting role: the ruler would come to have control over a bureaucratic system of tax collection which allowed the awarding of tax collection rights to allies and so it was possible, by making potential enemies part of the state system, and thus making their interests converge with the state's interests, bring areas under some kind of a centralised control.⁶ Earlier we saw Sayer making a similar argument about England except that according to him England had certain centralised power structures in place already much earlier.

Relatedly, Walker argues that “[a] major factor in stimulating economic growth and change was the increasing tendency for economic life in Britain to be organised on a national rather than a local basis” (Walker 1968, p. 11). In Britain this showed in London becoming an administrative, industrial, trade and financial centre. Walker notes further that in the 1707 Act of Union England, Wales and Scotland came to form a centrally controlled economic area largest of its kind in Europe at the time. It distinguished itself from the rest of Europe in that it enjoyed freedom of trade not achieved in Europe due to “rigid state control, internal tariff barriers, guild restrictive practices and a multiplicity of currencies, weights and measures”. (Walker 1968, p. 12)

Protective policies in the form of monopolies and taxes on imports were introduced, a more or less coherent policy approach known as *Merchantilism*. These developments are part of the gradual process in which economic issues began to have a more and more significant role in politics. This is a natural course of development when we consider that in the period that we are concerned with population, and consequently the market, grew bringing more and more people in the scope of national and international economy which was bound to be reflected in the concerns of the politicians.

When trade had previously concentrated around luxury items, being thus aimed at the fancies and needs of a rather narrow section of society capable of affording

⁶This story is told at length and in convincing detail in Part 3 of Elias 2000.

luxuries, it now took a larger scale bringing within its scope a larger and larger portions of population. As the historian James Walker puts it:

Before the Industrial Revolution a high degree of self-sufficiency had been a feature of Western European economic life. As commerce was mainly concerned with luxury products the market was very limited in scope. But as the British economy became increasingly industrialised and urbanised the major staples in trade came to be those in popular demand." (Walker 1968, p. 103)

In around the middle of the 17th century English manufacture began distinguished itself from the dominant Venetian, who were known for the quality of their produce, by offering weaker quality but larger bulk and therefore lower price. "The result of this new attitude toward competition was a fivefold expansion in the production of new draperies between 1600 and 1640 ... It was this English explosion of inexpensive and imitative woolens that destroyed the Venetian woolen cloth industry" (Rapp 1975, p. 513). Lower price meant that a larger consumer base could afford the product.

Referring back to the methodological considerations of the first chapter, it is important to note that the Revolutions brought about a change in the lives of the pragmatic human being tying them to developments international in scale. Summarising the account of the historian Eric Hobsbawm, the historian Richard Lachmann writes:

Only after proletarianization created a mass market could capitalists make continuous profits from goods produced in the periphery alongside the far more profitable market for mass-produced goods created by the proletarian workers themselves. (Lachmann 1989, p. 59)

In many ways then, the changes associated with the various Revolutions we have here considered are in an interesting way *quantitative rather than qualitative* in character. This is to say, international trade had existed since ancient times, but starting in the early modern period it gradually began to take a scale never before seen in human history. It began to have an effect on ever larger portions of the human population: certain production and consumption patterns dominated that were themselves age old but had never been practiced on such a scale.

The human population itself rose to numbers never seen on earth before. Let us be clear that we don't want to hereby belittle the role of (qualitatively) new technologies and knowledge. However, from the point of view of the present project, it is important to emphasise that the modern society and its technology came to be acted out on a large scale. Only this way is it possible to make the structuralist argument we are here concerned with about the nature of modern environmental issues.

The above described dynamic of changes bears particular significance to the human being as a pragmatic being. For this meant diversifying and widening of the possibilities of sustaining oneself, which is and continues to be, as was argued in the first chapter, of crucial interest to us as pragmatic beings. It also meant a gradual structural transformation of the social environment as the new modes of production created new social roles and relations transforming old ones.

An important part of this transformation is the convergence of political and economic interests in modern society. The analysis of the WWF report above gave us the idea of how the society today is economised and how, consequently, one of the main functions of political decision makers is to create and maintain favourable conditions for economy to run smoothly. The well-being of society and that of the economy are intertwined which gives rise to forms of human well-being only realisable in the frame of modern society. Historically, it was of great advantage e.g. to the English that the political and economic spheres of society were relatively well integrated early on.

From our perspective, interesting are the environmental consequences of these changes. Carolyn Merchant reviews a number of ways in which the natural environment was subjected to a transformation in the early modern period. Already in the 15th century Dutch engineers were active in claiming land from the sea in their home country and later in the 17th century advised similar projects abroad (Merchant 1980, p. 56). In England, drained were the once extensive fenlands gradually turning these areas "into neatly planted fields of grain, sugar beets, and potatoes, separated by the geometric outlines of canals" (Merchant 1980, p. 57). Merchant tells the story of the disappearance of these fens "well stocked with fish and fowl that afforded food for the people who made their home in the region" (Merchant 1980, p. 57). The drainings thus had human and social impacts in that they made impossible a form of life that relied on the fens for livelihood (the "fen dwellers" resisted with riots and arms), and the environmental impact

in the form of the disappearance of the fenland ecosystems (detailed in Merchant 1980, p. 57).

In addition to Merchant's point, it is well known that e.g. in the industrial and pre-industrial England the use of coal and charcoal polluted the air creating a semi-permanent smog over certain areas. Also, the impact of the colonial exploitation of nature is well documented. Whaling and sealing e.g. in the waters around Australia and New Zealand was intense from its onset in the 18th century resulting in dramatic declines e.g. in the right whale numbers which never recovered (Lines 1991, p. 35).

3.2.2 *The Argument So Far*

However, in a sense the most significant environmental impact the above related historical changes came to have were in a certain sense indirect and happened over time. To appreciate this we must broaden our scope from looking at particular environmental issues or environmentally problematic hot-spots to an analysis of modern society as a particular kind of a structural whole characterised by the need to produce intensively and on an industrial scale around which the various facets of individuals' life styles as well as politics concentrate.

Some of this analysis was conducted in the start of this chapter where we looked at the WWF report on modern environmental problems and how their causes and the way we conceive of them, and consequently seek to address them, reflect the socio-economic structure of modern society. We then recounted a version of the historical story of how the modern society in these respects came about. In this version of the story, central factors in the dynamic turned out to be intensification of commerce and trade together with associated societal changes such as the emergence of the nation-state, urbanisation, emergence of wage-labour as well as developments in technology and technique. Many of these were found to be changes happening on a quantitative rather than on a qualitative scale in that many of the societal features are found in earlier historical times but that in the modern times they begin to appear on a scale never seen before.

A feature of modern society to which we must pay special attention is the amalgamation of political or national interests with economic interests. Two historical developments pertain strongly to this. Firstly, it was, we recall, of England's, and Britain's, advantage that the nation early on acquired a unity of political and

economic interests. As a result, it was capable of sustained and focused politico-economic action that really made Britain the first modern nation. Secondly, and relatedly, being an advanced, modern nation implies being economically well interconnected, both domestically and internationally, which is a precondition to a working economy. In this respect England and Britain were seen to excel historically. The keyword, if there is one, really is that of societal *unity*: the unity of the political and economic spheres of society. The nature and implications of this unity were demonstrated in the analysis of the WWF report and the historical picture of the present section.

All this ties well with the structuralist methodology developed in the first chapter. The Wittgensteinian forms of life seen as complexes of Foucaultian power relations allows us to grasp the nature of the modern politico-economic 'unity' and how it directs or steers its members into particular forms of conduct. As pragmatic beings we internalise this frame learning to pursue its possibilities and through this process engage in environmentally consequential forms of conduct. When the unity then encounters problems, e.g. environmental problems, we have a certain frame in which we conceptualise and seek to address them, as was found above in the analysis of the WWF report. In other words, to stress an important point, it is the structural frame of modern society by which problems are *caused*, and in which they are *conceptualised* and *addressed*. Furthermore, it is primarily *by participation to this structure* that individual human beings contribute to society's environmental problems: the ecological unsustainability of modern society has in this essay been elucidated by giving an account of the structure of the modern, industrial, politico-economic complex and how it, by virtue of its *structure*, directs its members to ecologically unsustainable conduct (the maintenance of the structure being at the same time a condition of its continued existence in the form that we know it). By contrast, the alternative account that we look at next argues that there is a *world-view* driving societies and individuals to ecologically problematic conduct.

3.3 Mechanico-rationalism and Modernity

We can approach the issues by noting that there is a further factor or dimension to the historical story recounted in the preceding section. Where the present project casts our environmental issues primarily as a product of the activities of human beings in the frame of an industrial, politico-economic societal structure, there are writers who emphasise the role of the *modern attitude towards nature* as it is

given shape to by certain intellectual developments associated with the Enlightenment and the Scientific Revolution. The philosophical, scientific, and other views of nature, society, the human being, and so on, that these developments gave rise to, can be summarised under the banner *mechanico-rationalism*. Above we have occasionally made reference to a number of works discussing intellectual influences behind the causes of modern environmental problems. These were Donald Worster's *Nature's Economy* (1994), Morris Berman's *Reenchantment of the World* (1984) and Carolyn Merchant's *Death of Nature* (1980). Eventually, in the course of the PhD project, the precise nature of this so-called mechanico-rationalism will be articulated at length and in detail⁷. Here, however, due to lack of space, we may hopefully proceed with just one example illustrated by the contrast between Carolyn Merchant's approach and the present approach to the historical formation of modern environmental problems.

In a sense both of these approaches can be seen as merely emphasising the different sides of the one and the same coin, or the same die, as might be a more suitable metaphor. Yet, we can also distinguish a number of issues where a lot turns to depend on which side of the die we take most seriously. This is to say, in some ways for example our conceptualisation of history is affected by what we take as the principal characteristics of modernity. It is this issue that we address now.

3.3.1 Carolyn Merchant on the Mechanical World-view

Let us then go into more detail about Carolyn Merchant's account of environmentally unsustainable conduct of the modern human being as found in her *Death of Nature*. In Merchant's work, the ecological unsustainability of the modern society is explained by appeal to a *Zeitgeist* she calls the *mechanical world-view*.

The nature and origins of the mechanical world-view are characterised by Merchant by reference to the philosophies of Francis Bacon (1561–1626) and the mainly French mechanical philosophers such as René Descartes (1596–1650) and Pierre

⁷For the reader's orientation, while the issue is complex, it seems that an argument can be made that modernity has by its classic critics (e.g. Nietzsche), as well as by its proponents (e.g. the Enlightenment philosophers and their later followers), been seen as the age of Reason. That is, modernity has been seen as characterised by (the pretence to) rationality, scientific reason and the like. Merchant's feminist critique of modernity as an age of mechanical thinking and managerial ethos seems to fit this general orientation. By contrast, the present project — in broad orientational agreement with recent cultural critique (e.g. Klein 2000 and Monbiot 2000) and the Marxist tradition (e.g. Marcuse 1964) — sees modernity primarily as an age of economic concerns and thinking permeating societies and culture.

Gassendi (1592–1655). Merchant reviews Bacon’s aggressive rhetoric that champions the pursuit of nature’s resources for the good of the human race (Merchant 1980, p. 164 ff) and how this program was sketched out as a highly organised community effort in Bacon’s utopia *The New Atlantis* (Merchant 1980, p. 172 ff). The mechanical philosophy puts forward the concept of the world as a machine with constituent parts interacting according to universal laws (Merchant 1980, Chapter 9). Together these philosophies, according to Merchant, amount to a framework that values and seeks to establish the human power over nature, the human management of nature. This world-view, according to Merchant, describes the modern attitude to nature, sanctions the exploitation of nature and is thus responsible for the destructive behaviour of the modern human being in the natural environment. It can also be seen as a kind of an emotional distancing of the human being from nature, a view according to which the human being is radically separate from nature, the latter being there principally for human benefit and as a natural resource (Merchant 1980, Chapters 7-10). This world-view Merchant contrasted with the historically earlier organic world-view based around the idea of a symbiotic co-existence of the human being with nature and natural processes (Merchant 1980, Chapters 3-4).⁸

Merchant on Evelyn’s Sylva

As an example of the mechanical world-view in action, Merchant discusses the 17th century gardener and diarist John Evelyn (1620–1706) and his book *Sylva* on forest preservation and maintenance techniques. Merchant sees the mechanical world-view as having inspired Evelyn’s project of conserving and managing forests: “Managerial conservation was an adaptation of the rationalizing tendencies inherent in mechanism applied to the natural environment” (Merchant 1980, p. 238).

Let us, however, first be clear of the nature of Evelyn’s work. According to the historian John Nisbet, the bulk of the advice contained in Evelyn’s work is not

⁸While possibly a romanticisation, something like an organic, symbiotic co-existence with the natural environment seems to be true of the Australian Aboriginals who for tens of thousands of years inhabited the Australian continent before displaced by European settlers. The idea here is to note that when one’s sustenance is based on the collection of what appears naturally in nature (as in the hunter-gatherer mode of sustenance practised by the Australian Aboriginals) it is crucial that the natural reproductive cycles continue uninterrupted to produce the precious natural resources. The organic world-view, a certain respectful symbiotic attitude to nature, can be seen as having been born out of this. By contrast, sustenance by agriculture requires alteration of the landscape (e.g. clearing of forests, introduction of selected crops, etc.) and as such embodies a fundamentally different attitude to nature.

a result of experimental science or the application of scientific knowledge, but rather “contains an enormous amount of information in the shape of legends and of facts ascertained by travel, of observation, and of experience” (Evelyn 1706, Nisbet’s introduction, p. lix). It has been argued elsewhere that in general the recommendations of the rising Baconians in the Royal Society, such as Evelyn, were indeed often less results of novel or actual scientific work and more like collections of more or less tested traditional knowledge (Hunter 1981, Chap 4). Thus, if *Sylva* manifests certain rationalising tendencies, then it is in the sense of being a *systematic* collection of information or traditional knowledge.

However, as such it was not the first work in history to do so. Works of a similar encyclopaedic nature had been produced by the ancient Greeks and Romans. Historian Clarence Glacken mentions Xenophon’s *Oeconomicus* and the *Natural History* of Pliny (Glacken 1967, p. 13). Pliny’s work seems particularly significant here being a systematic collection of best available knowledge on various fields of agriculture and industry in the 1st century made by someone with close connections to the ruling elite in the Roman Empire. (Graf 1977, pp. 125-8)

In thinking about Evelyn’s *Sylva*, I want to pursue an alternative line that I think is true to the structuralist methodological position developed in the first chapter of this essay. I want to defend the idea that the fact that Evelyn put together such a systematic collection of information is to a large extent explained by structural factors: there was then certain kind of interest in the information and recommendations it contained, namely, by the English state, and Evelyn was disposed to serve that interest.

As recognised by Merchant, Evelyn’s *Sylva* can be seen as embodying the Baconian pragmatic idea that forests are of most advantage to the human being if conserved such that they continue to yield resources in the future. Giving depth to this observation, Nisbet points out “that *Sylva* was a work of national importance. ... England was dependent on her Navy. But the stock of Oak timber suitable for the requirements of the naval dockyards had become almost exhausted”. *Sylva* was a response to a query from the Royal Navy to the Royal Society, a member of which Evelyn was (see Evelyn 1706, Nisbet’s introduction, p. lix and Hunter 1995, p. 128). These further facts allow us to appreciate a deeper aspect of Baconian pragmatism: it wasn’t pragmatism for its own sake, but for the sake of the well-being of the state.

We see then that, if anything, *Sylva* embodies the co-operation between the state and men of letters emerging as the notion of 'English interest' and the English nation-state emerges in the 17th century. Evelyn's immediate motivations were his servitude to the state and its navy, not a world-view. Indeed, as the historian Michael Hunter argues, in *Sylva* Evelyn voiced his "dedication to the King, which exemplified the [Royal] Society's hopes to assist in practical matters through the collaborative efforts of its members" (Hunter 1989, p. 26). Hunter further points out that "Evelyn's upbringing" had planted in him the idea that "it was the duty of a well-born, well-educated man like him to place his services at the disposal of the state" (Hunter 1995, p. 69). Evelyn indeed acted in various civil servant roles in his life (Evelyn 1706, Nisbet's introduction in *passim*).

Thus, more immediately than some rationalising tendency, which in any case, as we saw, was not a historically unique phenomenon, Evelyn's relationship with nature was constituted by his role as a civil servant and the resource demands of the emerging nation-state and world power. This conclusion I think exemplifies the results yielded by the focus on understanding the societal structure as setting up the stage for historical actors to act on.

Pragmatic Being Again

To bring out the difficulty that I think Merchant's account faces by another example, consider what she writes in the 1990 preface to *Death of Nature*: "Emerging over the past decade are a number of scientific proposals that challenge the Scientific Revolution's mechanistic view of nature" (Merchant 1980, p. xvii). She then briefly reviews the relativity and quantum theories in physics, Bohm's process physics, new thermodynamics and finally the chaos theory, each in one way or another challenging the prevailing assumptions about the fundamental nature of the world. She goes on to conclude that "[w]hat all these developments point to is the possibility of a new world view that could guide twenty-first-century citizens in an ecologically sustainable way of life" (Merchant 1980, p. xviii).

Now, the same problem evident in this line of reasoning bothers also her historical account of the mechanical world-view as accounting for ecologically unsustainable behaviour: it is not at all clear as to how someone's views, say, on the relativity theory could possibly alter his or her activities in the natural environment in any significant way. Isn't it much more plausible to seek the crucial factor in something more immediately close to ordinary life, such as how does the modern society produce food, how does its large urban population make a

living, what kind of a life-style it has, and so forth? As it was argued earlier, does not the societal structure in the frame of which we operate and whose possibilities and limitations we pursue account more directly for our behaviour in nature than our world-views?

In sum, the argument here draws attention to two kinds of considerations. First, I have argued that when Evelyn's work is put in its historical context, it becomes unclear as to whether something like a mechanical world-view really is needed to account for the nature of Evelyn's work. This raises the possibility that the world-view must never be evoked but its work is always done by structural historical factors. This I think is a very real possibility when we discuss something as vague and potentially diverse as individuals' attitudes to nature. The structuralist view put forward here as an alternative to Merchant's, is, I think, further supported by the contemporary observation that what is particularly ecologically disastrous to nature is its large-scale human exploitation which draws attention to structural facts about the material needs of modern industrial society, and less, if at all, to a world-view. Furthermore, and this is our second point, the connection between human attitude to nature and some philosophical and scientific views about nature, that the former is allegedly influenced by, is itself vague. My brief discussion of Merchant's comments on chaos theory etc. to alter one's conduct in nature is intended to cast doubt in this respect.

In the background of this debate loom different conceptions of the capabilities of the human being as an actor in historical, societal and other shifts. The present work casts the human being as in a sense a *pragmatic* or "primitive being" (Wittgenstein 1975, §475), that is, as someone embedded in their form of life pursuing its possibilities within the limitations that it constitutes. This picture of the human being was discussed in the methodology chapter. In Merchant's work, however, the human being is in a sense over-intellectualised: we are cast as conscious of and as being capable to be motivated by such fairly high flying intellectual notions as the mechanical world-view. It is not my intention to dispute that some people genuinely grasp and are motivated by various forms of intellectualism. I think it is, however, safe to say that in particular what comes to our environmental problems, which are acted out on a *large societal scale* and by *the bulk of the human beings*, it is not plausible to attribute *to the bulk of us* the consciousness of, and motivation by, something like the mechanical world-view.

As we have presented Merchant here, it may seem as though her work is completely ignorant of the historical and social situatedness of the people and theories she talks about. This is, however, not true. For instance, of Bacon Merchant writes that “his program [was] ultimately benefiting the middle-class male entrepreneur” for “Bacon’s roots can be found in middle-class economic development and its progressive interests and values” (Merchant 1980, p. 165), an observation which ties well with the historical story of the amalgamation of economic and political interests told in this essay (which is also noted by Merchant, see 1980, p. 51 ff). Also, her discussion of the English draining of the fenlands begins by noting that “[t]he ecological effects of the expanding agrarian market economy are vividly illustrated by its encroachment on another ecosystem and its associated human subsistence economy” (Merchant 1980, p. 56). Interestingly, Merchant even echoes what we have argued in the present essay about the pragmatic human being being driven to ecologically problematic behaviour because of structural changes in the society: “[i]n large measure, English agricultural improvements was originated toward improvement of the farmer’s own [economical and social] status” (Merchant 1980, p. 56), which may imply that a lesser role is played by whatever managerial ethos or mechanical world-view can be found in the thinking of the English farmer.

The reader of Merchant is, however, puzzled as to what is the relationship of these two apparently diverging stories that yet are both found in *Death of Nature*. As we saw, for instance in Merchant’s story of the case of John Evelyn, the emphasis on the mechanical world-view or managerial ethos as an explanatory concept takes precedence over the argument from social and historical situatedness. Also, in the brief comment in the 1990 preface to *Death of Nature* that we considered above (about the potential of the chaos theory and the like to transform our world-view in an ecologically beneficial way) the role of our social and historical situatedness as transforming our conduct is basically sidestepped. While the two approaches may not be mutually incompatible, their relationship should be articulated. This is not done in Merchant 1980 which may be due to the lack of an explicit methodology in the work, that is, the lack of an explicit account of the capabilities of the human being as a historical actor. In the present essay, we have sought to remedy this by putting forward methodological considerations in an attempt to relate the socio-economic structure, world-views and the like to the life’s sphere of the actor in historical shifts, namely, the human being as a pragmatic being.

I close with a discussion of a related way in which we may try to see the mechanical world-view as having environmental consequences. Socialisation is a process where the mores of a society are transmitted onto the next generation. Indeed, a socialisation process is one that Wittgenstein drew attention to when he argued that we acquire and use language in a social environment, that is, when we learn to participate in the activities of the community. Socialisation gives rise to what we may term 'collective consciousness'. As an example of this, as we saw, Evelyn's upbringing joined him together with other "well-born, well-educated" in the ethos of servitude to the state.

Notice, however, that this sort of a collective consciousness is rather different from Merchant's world-view in that the former pragmatically and more immediately connects the individual to e.g. career prospects, occupations of the previous family members, existing political make-up of the society, and the like, while the mechanical world-view most immediately connects with some rather abstract, intellectual theories about the most general nature of the world. Seen this way, the appeal to socialisation is first and foremost a *structuralist* move in that a *Zeitgeist*, collective consciousness, or what ever we term it, is a *product of* a societal structure. Furthermore, by relating this way to the stage for the individual to act on and to the roles to choose from, the *Zeitgeist* is a *positive* factor driving individuals to certain kinds of roles and conduct, as in Evelyn's case.

By contrast, it seems as though the role that Merchant gives to the mechanical world-view must be seen as in a certain sense *negative*: the world-view does not drive people to exploitation of nature, as it were, just for the fun of it, rather, it gives people a certain freedom to exploit nature by *disenchanted* it, i.e. by clearing it of any sacredness. Importantly, this leaves it open as to whether people actually go on to any such activities. I take it to be implausible, and not in Merchant's or anyone's intention, to argue that e.g. Evelyn was driven to write *about forest conservation* because of a world-view. Rather, he was driven to write about forest conservation because of the aforementioned political interests to such work by the state. It was just that because of his world-view he wrote about it *in a mechanico-rational way*. This is plausible, yet, as it was argued in the previous section, there was little, if at all, historically unique in Evelyn's approach, as history knows of other much earlier systematic approaches to forest management. In some other context, an argument of this form may however be sustainable.

At any rate, from a Wittgensteinian perspective, in the most immediate sense socialisation concerns the training of novice members of society to occupy a societal role and thus contribute to the continuity of the society. This kind of training maintains the society structurally and thus *positively* or *actively* drives individuals to particular kinds of actions. By contrast, a world-view in Merchant's sense, while it too may be transmitted by socialisation, has a negative role of, as it were, declaring nature sacred or profane and as such perhaps exposing nature to, but not leading individuals to, particular forms of conduct.

CHAPTER 4

Conclusion

Our aim in this essay was to analyse the notion of the human/nature relationship from a structuralist perspective: human beings engage in ecologically consequential conduct primarily as members of modern industrial society. In Merchant's view, the relationship was by contrast conceived of as characterised by a managerial attitude as implied in the mechanical world-view. Wittgensteinian structuralism allows us to see the relationship as mediated by the societal frame in which the human being engages in ecologically consequential activities. This involves casting the actors of historical shifts as pragmatic beings, the societal frame within which these beings live their lives being the most immediate influence to the ecologically problematic nature of their conduct. This view was supported by a structuralist analysis of the WWF report and by the story of the historical emergence of modern society as a politico-economic structure.

I hope to have given a strong outline of the projected PhD thesis by showing how various different academic disciplines can come together in an interplay between methodological, philosophical, historical and sociological theorising. I also hope to have provided a pilot study of sorts by putting the methodology in a practical use. In the process I have made a significant use of certain Wittgensteinian ideas outside of philosophy. Finally, I hope to have put together a sustained argument running through the essay as a result of which we are clearer about the nature of modern environmental problems.

4.1 Problems and Projections

Since this essay is partly an outline of and preparation for a PhD thesis, I will close with a brief discussion addressing some of the shortfalls and problems possibly pertaining to the present essay and the PhD project as anticipated in this essay. This is done in the hopes of obtaining useful suggestions from the readers of this essay. I will here go through the essay's main sections in the order of their appearance.

I take it that the Wittgensteinian/Foucaultian methodology that I develop is in principle a solid approach albeit in need of further explication and articulation. In particular, with the aim of making its ideas better articulated and approachable to a wider audience, it would be good to attempt to articulate the methodology using a more explicitly sociological vocabulary and literature. To give an example, in this essay I speak of structuralism, which creates allusions to a traditional and well-known body of doctrine in sociology to which the present project should be related in an explicit manner. In this essay, the discussion of other forms of structuralism was limited to a rather brief section.

Relatedly, the Wittgensteinian structuralist methodology should (and will, in the course of the PhD) be developed with regards to various question pertaining to its scope of applicability, ability to explain social change, its alleged conservatism, and many more. However, in the interest of making the present essay a sustained argument, the methodology was not developed and defended in areas that don't directly bear upon the present argument.

While I consider the discussion of the WWF report at the start of the Literature Review section revealing, the analysis there should really be supported by and related to literature in environmental sociology. This literature analyses, for instance, the various 'forcefields' and power brokers in modern society and the differing ways in which they conceptualise ecological issues. (Works reviewing these approaches include e.g. Schnaiberg 2005, Seyfang 2004 and Asdal 2003.) This will allow the creation of a more complicated, realistic and revealing picture as to what constitutes the structures of modern society and how they relate to its environmental problems.

The historical picture painted in the third chapter of the historical emergence of modern society is in many ways a sketch. It is, I think, valuable in that it reviews many central factors that historians have drawn attention to in their efforts to

conceptualise modernity. Yet, in the present essay, the historical developments are not traced out in rigorous temporal and 'causal' sequences that they may be seen as forming. This would have, however, required much more space and attention to regional differences than was possible here. Also, historical works sometimes contradict each other, but it was not thought to be to the point to engage in evaluating the merits and weaknesses of conflicting accounts here.

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