

TIME, CAPITALISM, AND ALIENATION: SOCIAL TIME
RELATIONS, CLOCK-TIME AND THE MAKING OF WORLD
STANDARD TIME

BY JONATHAN MARTINEAU

A DISSERTATION SUBMITTED TO
THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

GRADUATE PROGRAM IN POLITICAL SCIENCE
YORK UNIVERSITY
TORONTO, ONTARIO

May 2012

© Jonathan Martineau 2012

ABSTRACT

This dissertation enquires into the relationship between time and capitalism. In order to understand the nature of social time in capitalist societies, I perform a historical contextualization of the origins of clocks and clock-time, as well as the origins of capitalism. I situate the origins of clock and clock-time in feudal social time relations and practices of commerce and pre-capitalist wage-labour. I assess the historical development of clock-time, the formation of a temporal infrastructure of clock-time in England, and the transition from feudalism to capitalism through the transitional phase of agrarian capitalism in the English countryside. I then go on to enquire in the relationship between clock-time and capitalist processes of value formation and analyze the rise to social hegemony of clock-time in the form of World Standard Time. I forge a concept of capitalist social time relations as a struggling entity comprising abstract time and concrete social, natural and human times, and enquire into instances of social struggles which I read as temporal struggles. Finally, I enquire into the history of philosophies of time in the West, and I socio-historically contextualize the conceptions of time of Aristotle, Augustine, Edmund Husserl, Martin Heidegger and Henri Bergson. I end by drawing theoretical conclusion from my study of social time for disciplines in the social sciences.

Pour Milan

ACKNOWLEDGMENTS

I want to thank my supervisor, David McNally, for his support, help, and for his trust. I also want to thank Megan Dombrowski for her support, for numerous conversations, and stimulating comments and questions throughout the process of writing. Warm thanks to Ellen Meiksins Wood for her teaching and support, George C. Comninel for the dedication he puts in his teaching, revisions and comments, as well as his timely support in the final stages of writing, Thierry Lapointe and Isabelle Masson, for timely support and help, Mathieu Laperle, Frédéric Clermont and Jonathan Veillette for their friendship through all this, my parents, Daniel and Marthe, and my son Milan, whose questions about time I might answer better now.

Special thanks go to Sébastien Rioux, Amélie Delage, Xavier Lafrance, Frantz Gheller, Thierry Drapeau and the other members of the French Connection. I would also like to thank Kamilla Pietrzyk for insightful reading suggestions, and everyone at the Department of Political Science at York University, professors, staff and grad students, who have made my experience there enriching and stimulating.

Very special thanks go to Frédérick Guillaume Dufour, to whom I owe a lot, first for his friendship, but also for his mentorship, help and support which have allowed me to grow as a scholar.

Finally, I want to thank SSHRC for their financial support.

TABLE OF CONTENTS

Abstract.....	ii
Dedication.....	iii
Acknowledgements.....	iv
Table of contents.....	v
 Introduction.....	 1
 Chapter I: Social Theoretical Issues, Method and Time.....	 10
A) The problem of alienation and reification.....	10
B) Questions of method and social theory.....	22
C) Time in the social sciences: 'Social time'.....	51
D) Norbert Elias, Barbara Adam and time studies: towards a concept of social time.....	54
 Chapter II: The Origins of Clock-time, and the Transition to Capitalism.....	 78
A) The innovation of the clock: clock-time, wage-labour and commerce in context.....	78
B) Clock-time and pre-capitalist social time relations.....	108
C) The transition from feudalism to capitalism.....	119
D) The temporal infrastructure.....	126
E) Newton's time.....	130
F) Chapter conclusion.....	139
 Chapter III: Capitalist Social Time Relations.....	 144
A) Clock-time.....	144
B) The temporal consequences of capitalist value formation, or the theoretical relationship between capitalist value and clock-time.....	150
C) Labour-market, capitalist industrialization and clock-time	159
D) World Standard Time.....	163
E) Temporal alienation and reification.....	170
F) The temporal form of domination and resistance: the dialectics between abstract and concrete time in capitalist social time relations.....	184
G) Addressing alternatives.....	200
 Chapter IV: Cultural mediations and conceptions of time in context.....	 216
A) Introducing remarks.....	216
B) Romantic realism and alien nature.....	224
C) Philosophies of time.....	225
 Conclusion.....	 278
 Appendix A.....	 285
 Bibliography.....	 288

Introduction

Undertaking a study which focuses on the topic of time quickly confronts one with a powerful conundrum: time is both one of the broadest and richest topics, but also one of the most elusive. This conundrum perpetuates itself each step of the way, bringing both intense moments of excitement and cruel moments of despair. This stems from the fact, on the one hand, that time everywhere appears as a fundamental characteristic of *existence* itself, whether 'human', 'social' or 'natural'. As such, it is involved in any form of phenomenon, as well as in the very questioning of these phenomena that one might pursue. On the other hand, this very 'omnipresence' of time makes it almost impossible to track down, to isolate, to reduce to a definition - beyond common sense generalities. Time is indeed extremely difficult to encapsulate within a concept, surrounded by neatly traced boundaries. In other words, time, as it were, is everywhere and obvious, and yet it remains stubbornly ungraspable as soon as one endeavours to study it.¹ Perhaps this has to do with the fact that time is not a *thing*,² but rather a cluster of *processes* which defy standard conceptual thinking by their complexity, and by their very temporality.³

There is nonetheless hope for studies on time. But in order to achieve anything of potent heuristic value, any study on time must begin by taking position on some overarching issues, in order to delimit the scope inside which it can be read, and eliminate metaphysical pitfalls that can be avoided – let us hope - once the appropriate tone for this discussion is set.

There are two such issues with regards to which I should, from the get go, take a stand, given the nature of my study. First, my arguments in what follows will put forward the idea that time is a *social* phenomenon. By this, I mean that any idea or practice of time encapsulates a series of social determinations and mediations of temporal characteristics. Rooted in the field of social studies, my research will constantly aim at

¹ For Augustine, there was something of a distance between the inner knowledge of time and the actual conceptualization of it, when he remarked that 'What then is time? I know well enough what it is, provided that nobody asks me; but if I am asked what it is and try to explain, I am baffled' (Augustine, 1961, p. 264)

² From a very different perspective, Yuval Dolev's efforts also imply, among other things, a powerful reflection on the ontological status of time. See Dolev, 2007.

³ The term 'temporality' refers to the 'moving' and 'processual' aspect of time.

embedding conceptions and practices of time in their social and historical context. This is not to posit that there would be such a thing as an abstract temporal frame of 'history' in which different conceptions and practices of time would appear and disappear in a successive or discontinuous manner. 'History', as my research will implicitly suggest, is itself an idea and a practice rooted in differentiated social conceptions and practices of time, as well as made and remade by social practices. Human lives and social life do not *occur in* history, they rather *make* history. The same goes for conceptions and practices of time.⁴

The second point I want to introduce right away is that I refuse the dichotomies between natural time and 'subjective' or 'experiential' time, or between 'natural' and 'social' time. My argument here will constantly aim at achieving a synthetic account of *social*⁵ time in which human groups reproduce themselves, and develop conceptions and practices of time, in a way in which 'natural' time is always already socially mediated in human experience, in which 'social' time always encompasses a multiplicity of 'natural' and 'individual' temporal phenomena, and in which 'subjective' time is mediated by the simultaneously social and natural experience and constitution of human beings.

This study, more precisely, also isolates a specific research question. Indeed, I will deploy a non-dogmatic and freely adapted historical materialist conceptual architecture in order to address the relationship between *time* and *capitalism*. One of the premises on which I base my work is that every social mode of (re)production entails a fundamental infrastructure of social relations to time and social relations of time, an idea that Barbara Adam touches upon when she says that: 'each historical epoch with its new forms of socioeconomic expressions is simultaneously restructuring its social relations of time' (Adam, 2004, p. 125). I will enquire into such relationships, and into the relationship between the social organization of the metabolic activities of human societies and conceptions and practices of time.

⁴ In this sense, time is not a given, it is *produced*.

⁵ As István Mészáros argues (2010, pp. 186-190), it is only by taking the point of view of social agency, of social humanity, and of social individuals, that we can arrive to a mediation of, on the one hand, the nature/culture dualism, and on the other hand, the individual/society dualism.

In this study I ask, in other words, what are the characteristics of capitalism's mode of social time. I investigate the relationship between the rhythms of social life, as well as everyday life, and the processes of capitalist social value formation, and how these processes affect and/or construct a historically specific relationship between an 'abstract' time-form (known as clock-time) and a 'concrete' one (more on that in chapter III). Such an enquiry requires evolving conceptual definitions of both *clock-time* and *capitalism*. Here, I understand clock-time historically, as an abstract form of social time born embedded in pre-capitalist social relations and having, to some extent, spread in a context of transition to capitalism, before maturing all the way to social hegemony in a context of social relations predicated on capitalist value formation. I understand *capitalism*, for its part, as a system of social relations based on the dispossession of producers, and on the market mediation of social relationships between producers and appropriators, as well as between both of these groups and their social reproduction. These definitions will evolve and get refined throughout the study, as they further become tainted by my findings on the nature of the interaction between capitalism and social time. As such, they will require both historically and theoretically informed discussions.

My research is structured in the following way. Chapter I delineates the fundamental conceptual and methodological implications and bases of my study. I will discuss the concepts of alienation and reification. I will also assess different methodological debates in the field of the history of social thought, which are going to be central to my discussions of conceptions of time throughout the dissertation. I will then proceed to assess selected issues of social theory. I will analyze debates around key historical materialist concepts such as 'relations of production' and 'mode of production', and evaluate some contributions to historical materialist thinking in terms of the relationship between theory and history. I will then discuss how my research on social time relates to those issues, and how it might shed a new heuristic light on them. I will then move on to the more specific literature on social time, providing a brief overview of this literature in the social sciences. I will end the chapter by assessing and critically engaging with two of the most influential and insightful writers on the topic of social

time: Norbert Elias (1992) and Barbara Adam (1995, 1998, 2004). The discussion of these two theorists and of some aspects of their contributions will clear a lot of ground with regards to the definition of the concept of social time, as well as set the stage for what will follow in the remainder of the dissertation.

In chapter II, I proceed to a historical and theoretical analysis of the emergence of a specific form of social time: clock-time. I engage with the literature on that topic, and argue that the birth and relative spread of clock-time as a social form of time from the medieval to the early modern era did not result in it becoming the hegemonic form of social time. I analyze the social embedment of the historical origins of clock-time in medieval Europe, as well as the historical process of the relative setting up of what I call a *temporal infrastructure* of clock-time in the Western European region, and especially in England. In parallel, I provide a narrative of the transition from feudalism to capitalism in the English countryside. I then read Isaac Newton's conception of time in the light of its social context of formulation which is rooted in this transitional phase both at the level of the transition from feudalism to capitalism and at the level of the transition from 'pre-capitalist social time' to 'capitalist social time', to which I will refer as different *social time relations*.

In chapter III, I enter the crux of my research question and propose an account of the theoretical relationship between capitalism and time. I delineate the rise to hegemony of clock-time in capitalist societies by exploring its theoretical relationship with processes of capitalist value formation. In order to do so, I start by refining my concept of clock-time, and then evaluate the temporal aspect of Karl Marx's theory of value by exploring the (social) time-form in which it is embedded. I then move on to a mature industrial capitalist setting in order to evaluate the relationship between industrial capitalism and the rise to social hegemony of clock-time, a process which culminates in the instauration of World Standard Time in the second half of the 19th century. Accordingly, I revisit problems raised in chapter II, when I retraced the socio-historical origins of a specific form of abstract time, i.e. clock-time. I enquire into whether there is such a thing as a 'capitalist time', as specific capitalist *social time relations*, through theoretical analysis. I

also engage with the questions of historical sequence: did capitalism develop its own form of time and reconfigure social time 'after its own image', or did capitalism absorb an already developed form of social time and make it an increasingly hegemonic aspect of social life? I then go on to discuss the issues of temporal alienation and the reification of time in capitalist societies, before delineating some temporal aspects of contestation and resistance under capitalism. I end the chapter by critically engaging with a recent, thought-provoking contribution to the literature on the history of clock-time by Paul Glennie and Nigel Thrift (2009).

In chapter IV, I will turn to the analysis of conceptions of time in the capitalist era - I will also, when required, compare and contrast such conceptions with conceptions emerging from different, non-capitalist, socio-historical contexts. My discussion will include thinkers such as Aristotle, Augustine, Henri Bergson, Edmund Husserl, and Martin Heidegger. Building upon Paul Ricoeur's magisterial work *Temps et Récit* (1983, 1984, 1985), but also critically engaging with it, I will enquire into the concepts of time developed by these thinkers, and evaluate Ricoeur's idea that philosophical enquiries on the concept of time lead to a fundamental aporia between 'cosmological' conceptions of time and 'experiential' conceptions of time. Ricoeur points to the fact that on the one hand, time has been conceptualized as an objective phenomenon of nature. This conception is referred to, in the literature on time, as the 'cosmological' concept of time. On the other hand, many influential thinkers have conceptualized time as a feature or a product of human individual consciousness. This conception is called experiential, subjective, or phenomenological time (see also Osborne, 1996; Elias, 1992, p. 5). Ricoeur explores the ways in which these two conceptions are incommensurable. My discussion, however, will rather examine these conceptions by rooting this 'aporia' found in Bergson, Husserl and Heidegger, in the context of capitalist social time relations and capitalist temporal alienation.

My own conception of time evolves throughout the study, as I increasingly aim to show, through the construction and delineation of a *social* concept of time, its profoundly *political* characteristics. I wish to perform a de-reifying critique: in showing that time is

not a 'thing', a neutral natural object, or a neutral ('given', 'ahistorical' and 'asocial') universal feature of human consciousness, I present the concept of time as a locus of social struggle over meanings and practices, and as such a powerful political and ideological tool. For example, a reified concept of time can have direct political consequences: conceiving of time as a universal, unchangeable *thing*, directly challenges a political thesis such as the one positing that humans make their own history. Indeed, if time is out of the reach of the people, how can they shape 'their own' history, 'their own' historical time? I am also very sympathetic to the following formulation, by Peter Osborne, of the political characteristics of time,

I write of a 'politics of time'; indeed, of all politics as centrally involving struggles over the experience of time. How do the practices in which we engage structure and produce, enable or distort, different senses of time possibility? What kinds of experience of history do they make possible or impede? Whose futures do they ensure? These are the questions to which a politics of time would attend, interrogating temporal structures about the possibilities they encode or foreclose, in specific temporal modes (Osborne, 1995, pp. 199-200).

*

The way in which I have decided to pursue my study raises a question regarding the nature of critical scholarship. So pervasive is clock-time hegemony nowadays that critical scholarship on the topic has been driven to focus on the 'multiplicity' of time (Adam, 1995, 2004; Hassan, 2009), or on 'marginalized' times (Donaldson, 1996; Gupta, 1992; Leccardi, 1996 among others) in order to combat such hegemony. Accounts of clock-time as 'economic time', and 'commodified time' have even sometimes been declared 'old-fashioned', or out of date (to some extent Glennie and Thrift, 1996, p. 276; Hassan, 2009; Adam, 1995, pp. 94-99), and what is deemed as necessary, now, is for critical scholarship either to give a voice to temporal experiences which are (were?) marginalized by clock-time, or recognize that the empire of clock-time is over in our 'post-modern' world (Hassan, 2009).⁶

⁶ Carmen Leccardi bases her plea for a focus on women's time on the alleged 'irreversible undermining' of clock-time's hegemony. Although I share her conviction that women's time must be analyzed, her diagnostic of the fall of clock-time's hegemony seems to be hasty. Moreover, her analysis of the

The question as to whether clock-time hegemony is today over is not one that I will investigate in detail in the present study, although my discussion would suggest that it is not. My study focuses on the period from 1300 to 1935, and as such, directly contemporary issues are not my main center of attention. However, the claim that the 'empire of clock-time' is now over seems to me to underestimate the relationship between clock-time and capitalist value formation. I would be inclined for now, therefore, to say that as long as the dominant forms of social relations are capitalist, abstract clock-time will *tend* to be the hegemonic form of social time. The effects of processes related to the neoliberal restructuring of capitalism since the 1970s, as well as the socially embedded technological developments in recent years, will form the object of a future study. For a discussion of these topics, see Hassan (2009), among others.

I want to clarify right away the issue concerning the 'voice' of marginalized times. The problem I want to address is the following: I choose to focus - to a great extent, but not solely - on capitalist abstract time, while a 'critical' position in time studies might entail that I would, by doing so, obscure the richness of social times, or ignore the marginalized social experiences of time. My position here is pretty straightforward and entails two parts. First, it appears as crucial to me to forge my own thinking on the hegemonic form of time in capitalist societies in order to be able to adequately address the nature and forms of temporal marginalization, alienation and oppression. Moreover, as will become clear in this study, retracing the historical and theoretical implications of the relationship between capitalism and clock-time does not lead to a marginalization of 'other' times, but rather to an understanding of their dialectical relationship with capitalist abstract time.

Second, as I embark on this journey, I sense that my account of the rise to hegemony of clock-time might actually clarify many issues which have been undertheorized and treated a-historically by critical scholarship on social time. For example, I wish to go beyond the mere assumption that nowadays 'time is money', in order to actually show why it is so, in contrast to most of the literature on the topic which

relationship between clock-time and 'the mode of industrial production' lacks theoretical and historical depth. See Leccardi, 1996, pp. 170-173.

mentions, or hints at, 'rationalization' processes and 'economic efficiency', without satisfactorily theoretically and historically rooting their analyses in actual processes of capitalist commodity production and value formation (for example Rifkin, 1987; Adam, 1995, pp. 84-106).

In other words, it seems to me rather odd that the recent spurge of studies on social time emphasize the need for social theory to go beyond the 'paradigm' of 'economic' time in order to highlight the multiplicity of social times. It is odd because on the one hand, I do not find the conceptions of 'economic' time to be 'paradigmatic' at all. In any case this so-called 'paradigm' is based on very little actual theoretical and historical analyses. It is one thing to use the expression 'commodified time', yet it is another to ground it historically, conceptually and theoretically.

Moreover, although the literature on social time has indeed – but unsatisfactorily – raised the question of the commodification of time, historical materialist studies of this question are rather scarce. Besides the magisterial work by Moishe Postone (1995), and the thought-provoking studies of David Harvey on the geography of capitalism,⁷ authors who treat of this question rarely go beyond economic clichés (Adam, 1995, pp. 100-105), or problematic accounts of the nature of capitalist social relations and social time relations (Giddens, 1979, 1981, 1984). For example, it is not enough, and as a matter of fact it is *incorrect*, to assert that industry 'creates' abstract clock-time (Leccardi, 1996, p. 170). A historical and theoretical study is needed in order to delineate the *historical* and *theoretical* relationship between capitalism and time.

It is odd on the other hand in a political sense, and here we touch on the issue of the nature of critical scholarship. In a nutshell, my position is that emphasizing the 'multiple' character of social times over and against its commodified aspects does not wish 'commodified' time away. The danger here is of downplaying this aspect of time in capitalist societies, which remains, I would endeavour to say, hegemonic today, even in a so-called context of the 'information' age, 'technological revolution' or 'post-modernity'.

⁷ David Harvey has also provided insightful contributions to the topic of capitalism and what he terms 'spacetime', see Harvey (1990) among other texts. A superb introductory chapter to David Harvey's work is provided by Sébastien Rioux in Jonathan Martineau (ed) (forthcoming in 2012).

The point, here, is to be able to provide a socio-historical analysis of social time in a way that both emphasizes the commodification of time - by mobilizing non-dogmatic historical materialist concepts and insights about value formation in capitalist societies - and also treats the commodification of time not as a once-and-for-all event, but as a conflictual *process* implying a tendency by capitalism to create and reproduce an abstract time framework which alienates, subsumes, reduces and abstracts from concrete social times, while being contested and resisted by women and men as historical agents thriving for the re-appropriation of their concrete times, bodies and lives. Such a focus on time as a dialectical process under capitalism can provide the analysis with an emphasis both on the tendency of capitalism to commodify time *and* the irreducible substratum of 'multiple' concrete times which make up the social fabric. In this sense, mobilizing women's time, for example, can be made without losing sight of the ongoing social struggle between women's time and a male-centered hegemonic social time. Mobilizing workers' time can also be made without losing sight of its 'other': the commodified abstract time produced and reproduced by processes of capitalist value formation. Mobilizing non-Western conceptions and practices of time goes hand in hand with the assessment of the main features of what these times are struggling against.

Only when a thorough examination of capitalist time is laid down as a stepping stone can we better understand the nature of 'multiple', 'concrete', 'obscured', or 'marginalized' times, i.e. understand better *why* they are marginalized, what processes govern their marginalization, and how embodied temporal resistance is never completely shut down. It is in identifying abstract clock-time as a tendency, inherent in capitalist processes, which has become hegemonic, that we can better understand the fate and the nature of 'other' times and the processes which govern their marginalization. From this perspective, shedding light on marginalized times and examining both historically and theoretically the nature of the hegemonic form of time under capitalism *are not* mutually exclusive.

Chapter I: Social Theoretical Issues, Method, and Time

- A) The problem of alienation and reification.
- B) Questions of method and social theory.
- C) Time in the social sciences: 'Social time'.
- D) Norbert Elias, Barbara Adam and time studies: towards a concept of social time.

A) The problem of alienation and reification

Before tackling methodological questions, I need to take a first step towards the definition of two key concepts that are going to figure prominently in this study. I will provide here some quite comprehensive discussions, but importantly, all along the study, these concepts will not only be put to work, they will also gain in consistency and delimit more precisely their scope according to the movement of the enquiry. Static definitions will not help break rigid dualisms, or de-reify conceptions. As such, concepts will be in constant relation to the movement of the study. Definitions here provided should thus be looked at as a blueprint which, along the way, will evolve according to the movement of the analysis.

First, I will look at two key concepts in historical materialist theory: alienation and reification. They are connected in a very profound way, and this discussion will posit that alienation represents the more fundamental concept, and reification one of its variants, or forms. I will look at Marx's concept of alienation and its relation to class societies. Then, I will suggest that reification is a phenomenon specific to capitalist societies. Building on the work of Georg Lukács (1971), I will argue that reification is a form of alienation specific to capitalist societies and based on commodification. This is one of the ways in which this study will underline, at several stages, the specificity of capitalism. These definitions and discussions will also be mobilized later in the study, especially in chapter III when I discuss the issues of temporal alienation and of temporal reification.

The concept of alienation

The first concept to examine is alienation, which, from a historical materialist perspective, forms the basis of concepts such as fetishism and reification. 'Alienation' has its roots in making what is one's own alien by selling it, or giving it away. Alienation is, as I read Marx, a concept with a fairly broad historical scope of application, although, very importantly, it does not apply universally, nor trans-historically. This is due to the fact, as I will discuss below, that Marx distinguishes between alienation and objectification. From its articulation with estranged labour, alienation is a concept that applies specifically to *class* societies. Let me look at this concept more closely.

When Marx encountered political economy in late 1843 and early 1844, he was, philosophically speaking, influenced by, and taking part in, the young Hegelian movement. Some commentators stress his close philosophical relationship with Ludwig Feuerbach in that period (for example Althusser, 2005, p. 35), and thinkers such as Bruno Bauer and Max Stirner, notable young Hegelians, were his chief rivals.⁸ Consequently, conceptions of differing versions of alienation, which were developed in the Hegelian tradition - but not exclusively - were ones Marx was familiar with.⁹ Indeed, to take one example, Feuerbach, among other young Hegelians, had developed a critique of religion, which revolved around a conception of a deity as *something external*, and yet *created by humans*, which are two main characteristics of the concept of alienation. As one scholar succinctly puts it, 'This was Ludwig Feuerbach's centrifugal thesis; religion itself is consciousness of the infinite, - God springs out of the feeling of a want; therefore conscious, or unconscious need, - that is God. Feuerbach's caveat to this assertion was an inverted sense of the - 'divine'; that — 'God' was purely a *human projection stemming from man's need* for denotation and an *object independent of himself*' (Kohout Lawrence, 2008, p. 6, my emphasis). For Feuerbach, God was a human creation endowed with a power of its own which ended up dominating its creators. Feuerbach's influence on Marx is seen chiefly in the latter's early political writings: it can indeed be argued that Marx's critique of Hegel's philosophy of right moves in the direction of identifying the state as a

⁸ See among others *The German Ideology* and *The Holy Family*.

⁹ See also Marx's discussion of Hess's idea that money is a form of alienation, articulated in 'On the Jewish Question'.

form of alienation. Humans' social powers are alienated from them and turned into political power, concentrated in the state.¹⁰ When Marx encountered political economy through Friedrich Engels' contribution to the *Deutsch-Französische Jahrbücher*,¹¹ he broadened his conception of alienation. Not only were God and the state human creations acquiring an independent life of their own and dominating their creators: social relations between producers and appropriators in class societies were also characterized by alienation.

Marx's discussion of alienation, in the 1844 *Manuscripts*, rests on the conjunction of two elements; the objectification of labour, and the alien existence of the object of labour. These two moments provide a point of departure to examine three forms of alienation: the estrangement of the thing (the alienation of the product of labour), self-estrangement (the alienation of humans from their own human activity), and the estrangement from human species being (entailing the alienation of humans from their world and their fellow human beings) (Marx, 1988, pp. 75-6).

A first crucial distinction made by Marx is thus between objectification of labour and alienation of labour. The objectification of labour simply refers to the fact that the product of human labouring activity takes the form of an 'object'.¹² Alienation, though, is not merely brought about by the objectification of labour. Indeed, the fact that humans transform nature, the sensuous world, into objects, is not alienation *per se*. It is only the first moment of alienation, and alienation entails *two* moments: the objectification of labour, i.e. the transformation of humans' practical activity and interaction with nature into an object, is supplemented, in cases of alienation, by the *separation* of the producer from her product, i.e. the alien existence of the object of labour.

¹⁰ Contract theorists such as Hobbes and Locke had already defined the state as the alienation of men's natural right in order to gain security. However, Marx's conception went further in discussing this alienation critically.

¹¹ Written in late 1843 and early 1844, this text by Engels, who was at that time involved in his family's factory in Manchester, greatly influenced Marx.

¹² Whether 'material' or not. For example, objects of labour, as use-values under capitalism, are meant to satisfy human needs: 'whether they arise from the stomach, or the imagination, [it] makes no difference' (Marx, 1976, p. 125).

Before going further, in order to better situate Marx's discussion, one should consider some aspects of his broader philosophical position. Indeed, a series of propositions concerning humans, and the relationship between humans and the world, underline Marx's theorization of alienation.¹³ First, he makes the distinction between natural and species 'man' (sic), a distinction which amounts to the contrast between the 'animality' and the 'humanity' of humans. Human beings are animals, in the sense that they possess natural powers, instincts and interests shared with other beings in the animal kingdom, such as eating, procreation and sleep. But these natural impulses are not merely animalistic in human beings since they, unlike other animals, are conscious of themselves as beings. That humans possess such a consciousness makes it possible for them to recognize other human beings as such. This characteristic, coupled with a sense of time,¹⁴ or the capacity of humans to incorporate the dimension of time in the thought process leading to their activity, makes every human being a truly species being (Ollman, 1976, pp. 73-130).¹⁵

The second set of propositions is concerned with the relation between humans and the world. Humans produce their own objective world through their practical activity, through their historically specific form of engagement with, and transformation of, nature. On the face of it, this relation could be understood as a crude subject-object relation, i.e. 'subjective' humans engaging with 'objective' nature. In fact, humans' relation to nature is much more complex than that. For one thing, these two cannot be separated, for humans are a product and a part of nature. On the one hand, humans as species beings are *defined* by their relation to nature itself. So humans are not human without their relation to nature, i.e. humans as subjects, as species being, are impossible to separate from nature. On the other hand, nature is always-already affected by human activity. Any 'objective' category of nature is already tainted by human ideas and practices. As such, humans and nature can't be conceived of as *apriori* separated entities.

¹³ This discussion of Marx's philosophical positions is inspired by Marx's own writings, but also relies on Bertell Ollman's discussion in Ollman, 1976.

¹⁴ This 'sense of time' can take extremely varied forms from one culture to the other.

¹⁵ Here, ideas about the incapacity of animals to be conscious of themselves as beings and to recognize others as beings might be challenged by developments in the field of animal studies and ethology.

From a historical materialist perspective, the relationship between humans and nature can be grasped through the concept of activity. This concept, according to Ollman (1976, pp. 85-93), sums up the three moments through which humans and nature are in relation: perception, orientation and appropriation.¹⁶ This points to the fact that humans must transform nature to live, since nature is not given to them in an adequate form for their survival. But, equally importantly, here emerges the idea that humans cannot be seen as atoms. Marx's philosophical position here entails that humans are true *zoon politikon*, social animals (Marx, quoted in Ollman, 1976, p. 105). Humans can only interact with nature *socially*. To be a human-species being thus also entails being a social animal.

It is thus through labouring activity that humans interacts with nature, and that humans are humans. Their true species being is thus to *socially* organize with others in their interaction with nature, in order to (re)produce their means of life and their environment,

It is just in this working-up of the objective world, therefore, that man first really proves himself to be a species-being. This production is his active species-life. Through and because of this production, nature appears as his work and his reality. The object of labor is, therefore, the objectification of man's species-life: for he duplicates himself not only, as in consciousness, intellectually, but also actively, in reality, and therefore he contemplates himself in a world that he has created (Marx, 1988, p. 77).¹⁷

Importantly, the philosophical position of historical materialism entails that the objective world is always already historical, since the conditions through which humans interact with nature are always historically specific.

In what follows, although I will speak of 'interaction' between humans and nature, I will seek to underline equally how, from a temporal perspective, human beings are constituted through society and nature *and* how human beings as agents shape social and natural temporalities.

¹⁶ In the context of the relationship between humans and nature understood in a more universal manner, Marx does use the term 'activity'. In Marx's later writings, the concept of activity is progressively replaced by the concepts of work and labour, as Marx moves to the analysis of the specificities of capitalism.

¹⁷ I am aware and I reject the gendered implications of the use of the masculine pronoun-as-universal (either 'man' or 'his', etc.), in this quotation. This applies to *every* quotation in this dissertation that displays this characteristic.

*

In line with these broader points about humans and the relationship between humans and nature, let me go back to Marx's discussion of alienation, which revolves around three interconnected forms. The first is the alienation of the producer from the product of her labour. The second is the estrangement of labour itself, of specifically human activity, or self-estrangement. Human activity becomes external to the producer; it is a means to satisfy an end. Here the means, labouring activity, satisfies the end; subsistence. In the context of alienation, the activity of the species does not permit humans to accomplish their species nature, to develop their potential as human beings. In class societies, humans are alienated from their species being, from the activity which makes them truly human. Alienated labour, by alienating the object of labour, deprives humans of their species-being,

In tearing away from man the object of production, therefore, estranged labor tears from him his species life, his real species objectivity, and transforms his advantage over animals into the disadvantage that his inorganic body, nature, is taken from him (Marx, 1988, p. 77).

Thirdly, this estrangement from human species being comprises alienation from nature and from others.

The concept of alienation thus points to, and underlines, the fact that humans do not experience their objective world as their own creation. This independent existence of the products of labour from their producers is the moment when one can speak of alienation. The objects of human activity are not under the power of their producers. They confront them as something alien, something outside of them,

the alienation of the worker in his product means not only that his labor becomes an object, an external existence, but that it exists outside him, independently, as something alien to him, and that it becomes a power on its own confronting him; it means that the life which he has conferred on the object confronts him as something hostile and alien (Marx, 1988, p. 72).

As Marx puts it: 'in estranging from man (1) nature and (2) himself, his own active functions, his life activity, estranged labor estranges the species from man' (1988, p. 76).

As a consequence of this threefold alienation, humans are alienated from each other:

An immediate consequence of the fact that man is estranged from the product of his labor, from his life-activity, from his species being is the estrangement of man from man. If a man is confronted by himself, he is confronted by the other man. What applies to a man's relation to his work, to the product of his labor and to himself, also holds of a man's relation to the other man, and to the other man's labor and object of labor' (Marx, 1988, p. 78).

Whereas Marx feels that human activity should be an end in itself, i.e. the free creation by humans of their own world, alienated labour becomes a mere means to subsistence. Labour itself, and not only its product, belongs to another. Moreover, humans' relations to other people, to their labour, to the product of their labour, to nature - i.e. to their species-being, to their historically specific potential 'nature' - are also estranged. Humans are diminished in class societies in that they cannot attain the fulfillment of their capacities and potential, and they are also unable to fully interact with their fellow human beings as species beings. From a philosophical perspective, Marx here echoes Jean-Jacques Rousseau: both see that human nature entails freedom, but both equally see that humans are in chains. While for Rousseau these are the chains of civilization, for Marx, these are the chains of alienation.

Importantly, here one should read Marx not as positing that estranged labour alienates humans from an *apriori* transhistorical and universal 'human nature'. Rather, what Marx is pointing to with his notion of self-alienation is alienation from historically specific human possibilities, from historically specific forms of creativity and freedom. Humans are not alienated from their true, eternal, universal and unchanging 'human nature', but from socio-historically created possibilities of self-fulfilment and self-development. What is part of human nature might be said to be a *potential* for freedom and creativity, but these two potentials can only be actualized in specific socio-historical contexts.

This preliminary discussion of alienation very simply suggests that alienated labour is a characteristic of every class society, in which labour is appropriated by one group of people through various and socio-historically constituted means of

appropriation.¹⁸ Such a process of appropriation entails the alien existence of historically specific potential features of human beings' social and species nature, which confronts them as alien forces. In short, in class societies, what belongs to humans is stripped away from them. In chapter III, I will enquire into the question of temporal alienation, or of the stripping away from humans of their time.

Reification

The phenomenon of reification should be seen in the light of the previous discussion on the concept of alienation. While alienation is a product of class societies, based on the alienation of the object of labour, reification, as a fundamental social process, is the product of a specific form of class society: capitalism. I consider reification not only as an 'ideal' phenomenon, but also as a basic objective social process of capitalism, and this will be illustrated at several points in this dissertation.

For the immediate purpose, which is to delineate a first conceptual clarification, one way to enter a discussion of reification is to look at Marx's related notion of the 'fetishism of commodities'. Marx used this notion to highlight how the capitalist market conceals, hides, *social* relations of production. What this means is that in capitalist societies, people can buy and consume commodities without being exposed to the slightest bit of information about the social relations underpinning the system that puts commodities on the store's shelves. This stems from the fact that social relations, in capitalism, assume the form of relations between commodities, between *things*. While fetishism appears in many forms in different societies where people ascribe human – or supernatural or divine – properties to things, the fetishism of commodities under capitalism makes it so that commodities appear as in relation with themselves, concealing social relations between human labours. Marx describes this phenomenon in these terms,

The mysterious character of the commodity-form consists therefore simply in the fact that the commodity reflects the social characteristics of men's own labour as objective

¹⁸ This is not to suggest that non-capitalist modes of production all entail the same forms of property or alienation. On the contrary, there are qualitative variations in forms of property and alienation between non-capitalist societies, and especially between pre-capitalist societies and capitalist societies. This point should become clearer in the discussions in chapter II and III on time and the labour process.

characteristics of the products of labour themselves, as the socio-natural properties of these things. Hence it also reflects the social relation of the producers to the sum total of labour as a social relation between objects, a relation which exists apart from and outside the producers. Through this substitution, the products of labour become commodities, sensuous things which are at the same time suprasensible or social (...) the definite social relation between men themselves (...) assumes here, for them, the fantastic form of a relation between things (...) to the producers, therefore, the social relations between their private labours appear as what they are, i.e. they do not appear as direct social relations between persons in their work, but rather as material relations between things (Marx, 1976, pp. 165-6).

This fetishism of commodities finds its basis in a basic process of capitalism, a process which can be grasped under the concept of 'reification', and which is a result of commodification. The fact that relations between human activities come to necessarily appear as relations between 'things' stems from the fact that the commodity is the bearer of value, itself related to capitalism's basic process of the commodification of human labour-power. As McNally summarizes,

commodity fetishism involves social practices that abstract the values of commodities from the concrete, embodied activities ('concrete labours') of the human agents who produced them. The result is a process of *real abstraction* through which concrete activity becomes subordinated to its abstracted (and alienated) forms of appearance. In the commodified world of capitalism, the system of commodity exchange revolves around the most abstracted form of value – money – while 'forgetting' its roots in concrete human labour. As a result, labourers are confronted by a world of commodities which, while of their own making, nonetheless stands over them and dominates them (McNally, 2004a, p. 155, original emphasis).

The commodification of labour-power stands at the basis of processes of reification, the 'real' social process through which relations between humans appear as relations between things. Commodity fetishism and reification thus go hand in hand, as results of commodification, which in turn is a form of alienation in which human labour-power is bought and sold on a labour market.

Importantly, while I suggest that reification is an objective phenomenon that shapes both real social processes as well as consciousness in capitalist societies, I do not mean that an 'economic' process uniformly shapes 'ideal' features of a society. The first reason is because I do not conceive of reification as an 'economic' process, but rather as a social one. Its objectivity is granted by its origin in real historical and social processes – it

is a social objectivity. Second, I do not treat either the 'economic', or any other social sphere, as a reified enclosed realm, as will become clear over the remainder of this chapter.¹⁹

In the essay 'Reification and the Consciousness of the Proletariat', Georg Lukács follows Marx and offers a comprehensive and pertinent examination of the phenomenon of reification as a result of commodification. Reification, for the Hungarian philosopher, is a product of the essence of the commodity structure that governs capitalist societies, in which 'a relation between people takes on the character of a thing and thus acquires a 'phantom objectivity', an autonomy that seems so strictly rational and all-embracing as to conceal every trace of its fundamental nature: the relation between people' (Lukács, 1971, p. 83). Lukács here echoes Marx and McNally: reification is a phenomenon, produced by commodity relations, in which relations between people appear as relations between things. But moreover, Lukács articulates this notion in pointing out how there are two different sides to the phenomenon: objective reification, and subjective reification. As he puts it,

Objectively, a world of objects and relations between things springs into being (the world of commodities and their movement on the market) [...], subjectively, a man's activity becomes estranged from himself, it turns into a commodity which, subject to the non-human objectivity of the natural laws of society, must go its own way independently of man just like any consumer article' (Lukács, 1971, p. 87).

This quote echoes Marx's point on alienation. On the one hand, the alienated objects of labour (as commodities under capitalism) enter into relation with one another on the market, while on the other hand, the worker's own subjective human activity, labour, is alienated. Indeed, since relations between people take the form of relations between things, the labour performed by the worker becomes something objective and independent of her, something that controls her, which is alien to her. Marx had pointed out the subjective side of this phenomenon: workers in capitalism come to regard their labour-power as a commodity, a thing, which they 'own'. They are forced to bring 'it' to the market and offer 'it' for sale, they are forced to forego their property over 'it'. As such,

¹⁹ I am sensitive to the critique made to Lukács by Eagleton (1994, p. 185), and I feel these precisions are needed.

subjective reification is both estrangement from self in the bodily sense: it is reification of human bodies, and in the psychological sense: it is reification of consciousness. Humans' own abilities become 'things' alien to them. The commodity relation under capitalism is, then, not just about transforming all 'use-values' in commodities. It transforms humans themselves in commodities, and penetrates human psyche,

It [reification] stamps its imprint upon the whole consciousness of man; his qualities and abilities are no longer an organic part of his personality, they are things which he can "own" or "dispose of" like the various objects of the external world (...) and there is (...) no way in which man can bring his physical and psychic "qualities" into play without their being subjected increasingly to this reifying process' (Lukács, 1971, p. 100).²⁰

Lukács' distinction between objective and subjective reification also points to the destructive side of this reification. It is not just an 'objective observable phenomenon' to be described and explained: it is a violent process that strips humanity from humans, and thus clearly a brutal form of alienation, 'this transformation of a human function into a commodity reveals in all its starkness the dehumanized and dehumanizing function of the commodity relation' (Lukács, 1971, p. 92).

Indeed, it seems clear from the following passage that subjective reification is a form of what Marx had described as self-alienation,

The objectification of their labour-power into something opposed to their total personality (a process already accomplished with the sale of that labour-power as a commodity) is now made into the permanent ineluctable reality of their daily life. Here, too, the personality can do no more than look on helplessly while its own existence is reduced to an isolated particle and fed into an alien system (Lukács, 1971, p. 90).

Lukács continues this passage by echoing the two complementary aspects of alienation as pointed out by Marx,

On the other hand, the mechanical disintegration of the process of production into its components also destroys those bonds that had bound individuals to a community in the days when production was still "organic". In this respect too, mechanisation makes them isolated abstract atoms whose work no longer brings them together directly and organically; it becomes mediated to an increasing extent exclusively by the abstract laws of the mechanism which imprisons them' (Lukács, 1971, p. 90).

²⁰ Lukács goes on to argue that modern critical philosophy springs from the reified structure of consciousness (Lukács, 1971, pp. 110-111 and following).

As such, for the Hungarian philosopher, reification is also a form of alienation from others, and from nature, and it is anchored in real capitalist social processes.

Importantly, for Lukács, reification is specifically a product of capitalism. The commodity form has to be socially dominant in order for reification to penetrate the inner fabric of social life. It is only in modern capitalism that commodity relations become dominant in society, thus reification penetrates deeply into social life only under modern capitalism.

In summary, alienation occurs when certain forms of social practices of appropriation based on historically constituted class relations strip away, separate human and socio-natural features from their producers, and make these features appear as something independent from them, something belonging to an outside force over which they have no control. Reification, for its part, is a specific form of alienation occurring in capitalist societies, where commodified social relations appear as relations between things, and it is expressed in the phenomenon of the fetishism of commodities, where, given that social relations are concealed through reification, people ascribed human properties to commodities, and see them as possessor of powers which belong to humans.²¹

I will assess, in chapter III, the extent to which social time relations are characterized by both of these phenomena (alienation and reification). I will look more closely at the relationship between the value-form and reification in capitalism, in the light of Marx's theory of value which I will read from a temporal perspective. Whereas Marx asked why value takes on this form - money - in capitalism, I am asking why *time* takes on this *form* – a dialectic between abstract clock-time and concrete times - in capitalist societies. I will posit that capitalist social relations entail temporal alienation in a specific way, and that as a result of processes of capitalist social value formation, time

²¹ As such, if people were to 'fetishize', to 'bow down' before the products of their own labour while not being separated of these products, this would be a situation of fetishism, but not of alienation. Also, it is important to note that the attribution of *human* properties to commodities is but one form of fetishism. In pre-capitalist societies, fetishism often takes the form of the attribution of supernatural or divine properties – or any other property with a cultural meaning - to things. Finally, it is only through critical analysis that the rootedness of these properties in human activity can be unveiled, it does not immediately appear as such.

becomes reified. Indeed, in this study, I want to show how the 'immediate' reality of time in capitalism is in fact the expression of a series of mediations in which time has become alienated and reified.

It thus seems more than overdue to perform a de-fetishizing and de-reifying critique of the concept of time. In what follows, I will put forward the idea that time is better conceived of as a socially mediated relation between humans and their world. This social mediation is shaped by the social organization of production and labour, and shapes it in return. Accordingly, time is not an immediate 'given', but only comes to human awareness always-already mediated by the social context in which the particular individual or group is situated. This dissertation will point to the fact that social time relations are shaped by human activity, they are closely related to the development of social life in general, and that in capitalism the abstraction and reification of social time relations in an ontologically charged concept of 'time' is akin to the abstraction and reification of social relations in commodities and money. In short, a first delineation of the concept of time points to the fact that it is not a thing; it is a *relation* between events, 'socio-natural' processes, social praxis and individual actions. I will discuss in more depth the concept of social time at the end of this chapter in order to explain why I speak instead of *social time relations*. But first, I need to address some issues of social theory and method.

B) Questions of Method and Social Theory

Concerning theory and method, there are two interconnected set of issues to be addressed in this dissertation, which will deserve some methodological and theoretical clarifications. The first set of issues concerns methodologies of research in the field of the history of ideas, as well as the relevance of the concept of time in them. The second set of issues has to do with the relevance of time in specific theoretical debates in social theory.

1- A first point to be discussed is the relationship between this dissertation and the discipline of the history of social and political thought. This study will address a central,

yet almost unnoticed, aspect of the discipline by raising the question of time. It is a striking feature of the discipline that those who endeavour to address the *history* of social and political thought do not conceptually discuss *time*. It is my wish that this dissertation will raise important methodological and theoretical points about this question, and perhaps clarify some issues relating to the methodology of the discipline.

One of the aims of this research is to enquire into the concept of time in the history of ideas. In order to do this, I will draw on Neal Wood's 'social history of political theory' as a methodological guideline (N. Wood, 1978, 2002).²² This method, on the one hand, complements the nature of my object of study in that it allows an examination of theories of time as socio-historical processes, i.e. not only as something occurring in an a-temporal realm of ideas, but also as something occurring in socio-historical reality. On the other hand, as I will discuss below, I will need to complement Wood's method with insights from István Mészáros' work (2010) in order to provide a more general socio-historical picture of conceptions and practices of time.

As such, I wish to use this methodological outlook, but also to broaden its object of study. Wood's method aims at relating *political theories* to specific socio-historical contexts of formulation. I will seek to endeavour into the analysis of ideas that might not specifically pertain to a 'political' theory, but nonetheless express and embody social and political aspects. For example, I will explore ways in which Isaac Newton's concept of time is linked to socio-historical development, even if this concept is not specifically rooted in a 'political theory' *per se*. I will ask whether one can, or can't, discuss such concepts critically and show how they do display and embody political, ideological, or, even more basically, socially constructed aspects.²³ Let me explore in more detail how I wish to build on Wood's work as well as address these methodological challenges.

According to Neal Wood, two 'ideal-type' modes of investigation confront each other in the study of the history of political thought, and actual work in this field of study is situated somewhere in between these two 'pure forms' (N. Wood, 2002, pp. 89-132).

²² This method has been forcefully enriched and deployed by Ellen Meiksins Wood, notably in her *Citizens to Lords* (2008) and in her *Liberty and Property* (2012).

²³ One could refer here to Thomas Kuhn's *Structure of Scientific Revolution* (1996), which points in the direction of the socially constructed aspect of scientific paradigms.

The dominant approach, or the pole that seems to attract most scholars, is the *philosophical*, which is often associated with the anti-historicist tradition that emerged from the works of Leo Strauss.²⁴ This mode 'concentrates on the internal relationship of the words, propositions, and ideas' (N.Wood, 1984, p. 1) of the text as an internally logical totality. In works predicated on this mode of enquiry, one finds examinations of the conceptual consistency and the logic of argumentation, which aim at evaluating a text's contribution to universal and perennial problems of political thought, for instance the problem of justice, the problem of the good life, or the problem of authority or power. Besides internal consistency, emphasis is likely to be put on a thinker's influences - be they adversaries or possible allies - in the 'canon' formed by selected contributions, more often than not a series of texts by white males usually writing from the standpoint of ruling classes. The debates between the 'canonical texts' of political thought, apart from silencing other potent contributions to the literature from women, non-Western and dominated classes' perspectives, also seem to create an abstract realm of their own, a non-place in a non-time where thinkers from centuries apart meet and debate over transhistorical human questions and problems. In such philosophical studies of the history of political thought, the work under scrutiny is thus often situated in a broader intellectual tradition. The text is compared and contrasted with other texts. The 'context' is here formed by classical or canonical *texts*, or by paradigmatic structures of discourse, and 'history' is understood, if at all, as a linear and disincarnated process of succession occurring within a self-enclosed realm of ideas.

The Straussian tradition, in particular, is methodologically situated very close to this philosophical pole. Its proponents are, furthermore, deeply anti-historicist. This tradition does not merely 'neglect' the historical contextualization of ideas: it considers that it is a mistake to do so. For example, Strauss states rather straightforwardly that 'political philosophy is not a historical discipline' (Strauss, 1988, p. 56). However, the distinction he makes between political philosophy and the history of political philosophy is central in order to really grasp what he means by that, and the shortcomings such a

²⁴ See Strauss, 1988, 1989. The Straussian tradition is well represented in Strauss and Cropsey (eds), 1987.

statement imply. Indeed, it is his contention that if, on the one hand, political philosophy proper is not a historical discipline, the history of political philosophy on the other hand is, since it takes part in modern philosophy which is itself characterized by historicism. Importantly, the relationship between political philosophy and history is thus not a completely severed one for Strauss. Indeed, political philosophy itself is not completely separated from 'history' as modern philosophy understands it, i.e. a field of its own, a realm, as opposed to the other realm, nature. History is *preliminary* to political philosophy in that if diverse historical and political experiences had not existed, the question of the best, or the good, political order would never have been raised. But what Strauss gives with one hand, i.e. that history is preliminary to political philosophy, he takes with the other, since for him preliminary does not mean 'part of', but rather 'outside of' (Strauss, 1988, pp. 56-57). Political philosophy as understood by Strauss, i.e. the speculative reasoning that attempts to answer universal and transhistorical questions about human life, does not have a historical or temporal dimension. It is pure speculative philosophy, unimpaired by historical or temporal questions. From such a perspective political philosophy does not have a temporal dimension, whereas the history of political philosophy does. How, then, can the history of political philosophy (if it is in this very strict sense that any trace of temporality is present in the discipline according to Straussian methodology) go on without a reflection on the theoretical, methodological and practical significance of the concept of time, without theoretical reflection on questions of process, temporality, time-sequences and duration?

Furthermore, in philosophical modes of analysis, history in the sense of social history, 'history from below' or the history of the 'material world', is generally not granted any meaningful explanatory power in the formation of a thinker's ideas. This does not mean that there are no references to social history. Indeed, it is frequent that historical data or analysis will be brought forward as a way of illuminating certain texts or as a way to provide a 'background' for the text's actual analysis. But it remains the case that this approach, in the last instance, does not in any systematic way tie the logic of

ideas to the logic of practice, to 'the everyday life of the age, to the turmoil of the political forum and the hustle and bustle of the market' (N. Wood, 2002, p. 115).

Although the *historical* mode of analysis of the history of political thought, which Wood describes as the 'social history of political theory', proposes to remedy to the lack of attention to social history in philosophical modes of analysis, it has not problematized the concept of time *per se*. However, it does provide tools in order to do so: it permits us to recognize the social character of time, given that the starting premise for this mode is that

Because ideas and actions are mutually dependant and interpenetrating, forming a seamless web, history should never serve as mere background to a political theory in a static and lifeless way. The basic objective of the historical mode of analysis is to explore the connections between the ideas of the theorists and the material conditions of their society (N.Wood, 2002, p. 115).

The point, for Wood, is then to examine the *historical meaning* of a text. More than – and not rejecting the purposefulness of – embedding ideas in an ideational structure, a paradigm, or in a tradition of thought, the historical mode of analysis aims at embedding ideas in their social matrix, in strong connection with that which was occurring in the social and political realms at the particular time of the theory's formulation. In this way, social and political ideas are addressed as elements participating in historical processes. Theorists, for their part, are understood as historical creatures. Theorists and their ideas participate in history and are related to the prevalent social, political, economic and cultural organization of their historically specific epoch. In addressing theory, more emphasis will be put on the social processes in which the formulation of the theory is intricate. This does not mean, however, that theory as such is less thoroughly addressed, for the 'theoretical part of theory' is also part of socio-historical processes. Linking theories with their actual context of development provides analyses of social and political thought with important tools for understanding the material realities from which thinkers' ideas draw their existence, and likewise into which they inscribe themselves. Ultimately, theories are here conceived of as social phenomena.

Such an approach attributes explanatory power to the socio-material context instead of seeing it as a mere background. But crucially, it is not a matter of drawing deterministic or mechanical causal links between social context and theories, or of reducing theories to reflections of a social context. It is more a matter of understanding the social context as the fabric in which theory comes into existence, the source of the problems which the theory assesses, and the conditions in which it emerges, in short, of de-reifying conceptions and reading them as parts of the socio-historical processes in which they are embedded, which they affect, and which have led to these texts remaining of interest generations after their formulation.²⁵

There might be space here to clarify my own thinking about 'determination'. 'Determination' does not have to be understood as a rigid and inescapable set of constraints and suffering imposed on people, or on practices. As Harry Braverman once put it, 'social determinacy does not have the fixity of a chemical reaction, but is a *historic process*' (Braverman, 1974, p. 21, *original emphasis*). Determination, in this sense, refers to the manners in which configurations of social relations (understood in a non-reductionist and historically processual way) put limits, and exert pressure on human individual and collective agency.²⁶ For instance, the logic of capitalist reproduction narrows the array of possibilities for social actions, behaviours and agencies. It also sets the stage for such social actions and behaviours, and pressures individual and collective agents into behavioural/mental schemes of actions. It does so, among other things, by setting the economic, legal, ideological and political contours of social reproduction, these contours in return allowing and rewarding certain behaviours, and condemning or proscribing others. But, crucially, human agency is always at work pushing those limits back and forth, and resisting as well as coping with those pressures. People have agency,

²⁵ Neal Wood and Ellen Meiksins Wood have used this method in several case studies, most notably in studies of Ancient Greek thought, Cicero and early modern England (N. Wood & E. Wood, 1978; N. Wood, 1984, 1988). Ellen Meiksins Wood also recently published the first two volumes of a broader history of Western thought using this methodology (E. Wood, 2008, 2012). David McNally has reinterpreted classical political economy, as well as some of Thomas Malthus and Edmund Burke's interventions in this way (McNally, 1988, 1993, 2000). Geoff Kennedy's work also draws on this methodological outlook (Kennedy, 2008). George Comninel has analyzed Marx's intellectual development drawing on Neal Wood's insights (Comninel, 2000). My research project thus aims at enriching, in many ways, this body of work.

²⁶ See also Raymond Williams' discussion of determination in Williams (1977, pp. 83-89).

but their agency does not evolve in a social void, nor is it a manifestation of an underlying 'human nature'. This agency is rather socio-historically fluctuant, as it is inscribed in, through, and against structuring effects coming from social conditions. This point should be kept in mind throughout the dissertation, but especially for the discussion about theoretical issues shortly upcoming in this chapter.

Neal Wood's method thus attempts to dissolve the dualism between theory and context, ideas and material reality, by historicizing them and putting them in a close relationship (I will say more on these very important points shortly). Nonetheless, while this body of work clearly offers a solid heuristic point of departure for this dissertation, the social history of political theory has not problematized the concept of time in the way this study wishes to do so. This methodology thus stands at the start of the project, but, crucially, it needs to be reshaped in order to adapt to my object of study. Herein lies one of the methodological challenges of this project, a challenge that will be undertaken throughout the dissertation. First, in studying the historical evolution of a concept, I will need a comparatively higher level of generality in my treatment of social context. This stems from the fact that I am not exploring one author, or group of authors' general political theory in a given socio-historical period. Instead, part of what this dissertation does is to explore the history of *one concept* over a long period of time and through different socio-historical contexts. Is not the very nature of this endeavour already positing that I adopt a method akin to the philosophical mode? I will show that this is not the case. Rather, what I need is a different level of generality with regards to social context. Instead of analysing the specific social context of an author, I will analyze more general social practices that give rise, and are shaped by, fluctuating concepts of time, and address specific differences between conceptions which are often otherwise seen as purely ideational re-appropriation and reworking by an author of a traditional problem. More specifically, I will look at the more general social practices of time that give rise to, and are shaped by, different expressions of the concept of time.

As such, I will attribute explanatory power to social facts, instead of seeing the evolution of the concept of time as a purely argumentative and logically driven

phenomenon. The very critique of the concept of time will inexorably lead to put it in contact with contexts of social practices. In fact, my reworking of the concept of time will make it a true social artefact, a social practice in itself, and the relationship between the concept and social life will be underlined to the extent that a social definition of time will be proposed in my concept of 'social time relations'. In this way, Neal Wood's insights provide this dissertation with its fundamental outlook: the specific methodology used in this thesis adopts this outlook and reworks it in order to adapt it to its object of study.

On another level, I will seek to explore the possibilities of relating not only political theories, but broader philosophical and cultural conceptions, to social development. I will ask whether Neal Wood's method can be broadened in this specific way.

One of the ways in which I suggest one can supplement Wood's work is by putting it in relation to the most recent work of philosopher István Mészáros, specifically in addressing the question of the social determination of forms of consciousness (Mészáros 2010). Mészáros' insights can be summarized as follows. The social context of capitalism produces specific methodological characteristics which underpin various systems of thought formed within such a context. Mészáros identifies major features of methodologies under capitalism, and relates those to inescapable elements of the totality of social relations under capitalism, as well as the specific standpoint of capitalism from which theories are constructed. Of course, the methodological articulations of theories vary to a greater or lesser extent according to specificities such as national settings, conditions of social interaction and varying schemes of power relations, different traditions and, I would add, different institutional settings of knowledge production. Yet, there are still general methodological trends that are associated with systems of thoughts that are 1) in dialectical relationship with capitalist social processes, 2) based on the reification of social relations, and 3) based on a corresponding reification, in thought, of both 'subjects' and 'objects' of knowledge. Those methodological characteristics of systems of thought produced in capitalist societies comprise the key role assigned to 'natural' science, a general tendency to formalism, a commitment to methodological

individualism, the suppression of historical temporality, the imposition of dualist categorial matrices, and the abstract postulates of unity and universality in place of real mediations (Mészáros, 2010, pp. 39-276). It becomes very interesting to relate those general methodological characteristics to the question of time and capitalism. As this study will suggest, the fate of the concept of time in capitalist societies is shaped by those features to a striking extent.

The more 'general' contextual features of capitalism analyzed by Mészáros can thus help us identify general trends that methods and theoretical systems tend to take in the context of capitalist societies. Whereas Wood invites us to consider the particular state-capital nexus, balance of class forces, national idiosyncrasies and personal commitments of particular theorists, Mészáros points to more general features that thought tends to adopt under universal commodity production. Accordingly, when dealing with the concept of time throughout this dissertation, I will sometimes take into account particular conceptions put forward by particular thinkers, and sometimes look at more general trends of cultural, scientific or philosophical development, especially when dealing with conceptions that can be related to capitalist contexts and might exhibit some of the features identified by Mészáros. Wood's and Mészáros' insights will serve as guidelines throughout these endeavours.

Theoretical points and their relationship to method

The study of the relationship between time and capitalism entails the use of a specific theoretical framework which permits to analyze capitalism, history, as well as other social forms. This framework, in my study, is provided by Marx's *Capital* and subsequent historical materialist contributions (Marx, 1976, 1978, 1982, 1988; Lukács, 1975; E. Wood, 1995, 2008, 2012; McNally, 1993, 2004a, 2004b; Postone, 1993; Harvey, 2006; Brenner, 1985a; Mészáros, 2010; Anderson, 1980; Ollman 1976, 2003; Comninel, 1987; Lapointe & Dufour, 2011; Teschke, 2003; Thompson, 1995; among others). Capital is understood here, in accordance with Marx's own insights, as a *social relation* and as a *process*. The conceptual road opened by such an understanding points toward a very clear

opportunity to address the relation between *social relations* and *time*. The fact that this issue has merely been touched upon by historical materialists is difficult to explain, although the sum of work referred to earlier will prove to be an indispensable window through which I will put historical materialism to work on the issue of the relationship between time and capitalism. However, historical materialism is not a homogenous body of thought. Indeed, my theoretical vantage point owes as much to 'Marxism' as to a *critique* of several of its versions. Let me point out how I conceive of historical materialism, and how I will try to put it to work in this study.

The problems of mechanical causality and economic reductionism

A first point which needs to be made concerns the old accusation of mechanical deterministic causality that has been made against historical materialist treatments of the relationship between thought and society. I mentioned above that N. Wood's method was not about drawing deterministic causal links between theories and contexts, nor about reducing theories to mere reflections of the 'economic' structure of society. Nonetheless, this accusation of mechanistic determinism and economic reductionism still needs to be refuted. Stressing the social determination of method, or the socio-historical context of emergence as shaping a theory, does not involve, does not even gesture to, anything mechanically deterministic, as I have pointed out above. As I see it, the idea that material context would mechanically determine the world of ideas is *not* a feature of a historical materialist theoretical postulate, and as such in what follows I use and adapt a version of historical materialism which refuses mechanical causality and economic reductionism.

Reductionist views of historical materialism take various forms but they find their roots in a common historical origin which has two sides to it. On the one hand, it was constructed as a tool for propaganda by opportunistic political forces. On the other hand, it was forged by intellectual adversaries of historical materialism in order to discredit it. As early as the 1910s and 1920s, Antonio Gramsci, Leon Trotsky, Georg Lukács, Rosa Luxembourg and Karl Korsch, to name only the most prominent, were already fighting

against this propaganda and these attacks, which were constructing a 'vulgar' version of Marxism.

Gramsci, for one, made clear what he thought was behind this mechanization and this reduction of historical materialism. For him, the regression from historical materialism to vulgar, or philosophical materialism, coupled with the plaguing of what he called the 'philosophy of praxis' by positivism, had resulted in 'vulgar Marxism'. On the one hand, positivism erred in its belief in the applicability of the method of natural sciences to social sciences. On the other, the regression from historical materialism to philosophical materialism entailed important errors. For Gramsci, when vulgar materialism posited eternal and absolute truths about material reality and reduced everything to a single final cause, it reproduced philosophical materialism's error of thinking about material reality in an absolute and a-historical way, of positing eternal laws of its evolution that would transcend the historically specific engagement of material reality by humans (see Gramsci, 1971).

In this context of the mechanization of Marxism, Gramsci called for a return to Marx, to the original philosophy of praxis where philosophy is historicized,

Separated from the theory of history and politics philosophy cannot be no other than metaphysics, whereas the great conquest in the history of modern thought, represented by the philosophy of praxis, is precisely the concrete historicisation of philosophy and its identification with history' (Gramsci, 1971, p. 436).

Gramsci did not just affirm this regression and leave it at that. Instead he tried to bring together an explanation as to why this regression to philosophical materialism and this infestation by positivism had taken place. Gramsci argued that part of the explanation for the regression to philosophical materialism stemmed from practical pressures. Indeed, the historical tasks of the 'philosophy of praxis' had been on the one hand to combat the highest forms of modern 'bourgeois' idealism, and on the other hand to educate and elevate the masses of Europe, whose culture was, in Gramsci's words, 'medieval'.²⁷ Thus

²⁷ This comment by Gramsci (1971, p. 392) is to be put in the context that for him, popular consciousness is neither to be dismissed as purely reactionary or purely progressive, but rather that the more progressive features and the more reactionary features must be distinguished. On this point see also the discussion by Eagleton (1994, p. 200).

the recourse by 'Marxists' to vulgar materialism was the result of the battle against idealism at the level of philosophy and science, and also against religious transcendentalism at the level of mass culture. In Gramsci's own words, 'the philosophy of praxis has been forced to ally itself with extraneous tendencies in order to combat the residues of the pre-capitalist world that still exist among the popular masses' (Gramsci, 1971, p. 392).

An explanation for the recourse by the intellectual elite of the Marxist orthodoxy to a positivist methodology is the long-lasting desire by Marxists to see themselves as producing knowledge that is qualitatively different from 'bourgeois' ideology and philosophy. This desire might in part stem from the fact that Marx himself had criticized these forms of knowledge. In the note entitled 'The Concept of Science' (Gramsci, 1971, pp. 437-40), Gramsci tells us that the need to find constant and uniform lines, first causes and so forth, is related to the practical problem of the predictability of historical events. The desire to present historical materialism as a science in this sense, that is in the sense of a methodology that permits one to abstractly see the future of society, is at the basis of the orthodoxy's alignment with the positivistic model of natural sciences. Hence, for Gramsci, it is the concept of 'science' which needs to be critically destroyed, 'it has taken root and branch from the natural sciences, as if these were the only sciences or science *par excellence*, as decreed by positivism' (Gramsci, 1971, p. 438). Gramsci argues that all that one is able to abstractly foresee is the struggle, but that only historical movement, and not abstract theory, can produce qualitative configurations of quantitative struggle. He thus invites us to reject mechanical causality, as it resembles more a myth than anything worthy of scientific prestige.

While Gramsci emphasized that point, I find that another fruitful approach to this issue – which he also hinted at – is to consider vulgar Marxism as the 'Party line' of communist parties in this period. The Party, as the 'supreme incarnation' of the proletariat, was also said to be the embodiment of its knowledge. That 'Marxism' could come up with a science of society in which mechanistic causal mechanisms 'confirmed' the historical mission of the Party was more a matter of political ideology than

heuristically potent sociological, historical, philosophical or scientific knowledge. These theoretical debates had thus further political implications, amongst which one finds the issue of political action. As one commentator pointed out, 'In repressing both the 'political' and 'philosophical' components of Marxism, the vulgar materialist conception of the transition from capitalism to socialism could in Gramsci's view lead only to political quietism and passivity' (Boggs, 1976, p. 22). In fact, if the evolution of human history is determined by causal mechanisms and laws that are formulated at the abstract level of 'dialectical materialism' before applying uniformly to history, this evolution becomes the product of natural and uniform laws of historical development that will unfold whatever humans do. Militants and socialists might as well sit and wait for the transition to socialism to occur by itself, propelled by the laws of capitalism's inevitable demise. This theoretical focus on scientific laws and its corollary political attitude of passivity are related to the historical context of the Second International, as Boggs reminds us,

The degeneration of Marxism into different manifestations of scientism and economic determinism coincided with two related factors: the decline of revolutionary prospects in Western Europe by the turn of the century and the integration of the major socialist movements (most notably the German Socialist Democratic Party) in the most developed capitalist societies. Theoretical attention was no longer focused on the dynamics of the revolutionary process itself but rather on the internal functioning of capitalism as such. As the actual historical situation of the proletariat failed to validate the more optimistic expectations of nineteenth century Marxism, many socialists sought a kind of fatalistic deliverance in the quest for "scientific truth"; science itself became a kind of faith in the leading sections of the Second International (Boggs, 1976, p. 24).

In other words, in the face of political defeat, the orthodoxy reassured itself with the idea of the scientific inevitability of capitalism's demise, whereas Gramsci asserted the renewed importance of revolutionary activity, of people engaging consciously with their historical situation in order to change it. The revolution would not be only a matter of capitalist crisis, but also and most importantly of popular activity, of collective will and actions performed by conscious human beings.

One can thus see how the causal logic of mechanistic theories was superimposed on *historical* materialism, and how this critique of Marxism has been refuted at least since

Gramsci's work. When critics accuse historical materialism of economic determinism, they simply display a lack of knowledge of the complexities of history of Marxism,²⁸ which reveals a constant battle between reductionist and non-reductionist views. With that being said, I will provide below more clarifications on these matters.

*

I can now add some refinement to the discussion of the relationship between ideas and contexts. Once mechanistic causality is rejected, how can one articulate the relationship between theory and context that both Wood's and Mészáros' methodologies lead toward? The relationship between ideas and contexts that this dissertation will put forward is a relationship we could describe, following Mészáros' expression, as *dialectical reciprocity*. I mentioned above that it is not a matter of establishing a mechanical link from cause to effect, but of grasping how elements of the social process constitute each other in their very relation to the social whole. The point here is to grasp reality as a social process, and to relate ideas and systems of thought to the social totality, i.e. the socio-historical *process*, of which they are part. This implies that one grasps forms of thought not only on the ground of how they immediately appear, but furthermore that one demystifies this very form of appearance by relating it to its conditions of emergence and instances of social mediations. First of all, this points to the fact that ideas and material contexts are not approached as discrete and distinct 'things', but rather as parts of a totality in process, a socio-historical whole. With this in mind, I will privilege a relational ontology over mechanical causal processes occurring between discrete and distinct 'objects'. This means that ideas and contexts are inseparable, they interpenetrate each other; they are co-constitutive.²⁹ Wood and Mészáros would no doubt agree with the

²⁸ On the recent renewal of historical materialism beyond economic reductionism and mechanical deterministic causality, see Jonathan Martineau (ed), forthcoming in 2012.

²⁹ One of the most recurrent problems of modern philosophy and epistemology, is the relationship between thought, or words, and 'reality'. Whether this problem is approached from the perspective of a philosophy of consciousness, or from the perspective of a philosophy of language, there seems to always be a gap to bridge between a reified entity, language or consciousness, and another reified entity, the 'real world'. The roots of this problem are to be found, I would argue, through a historical materialist understanding of alienation. The separation of humans and their world brought about by social alienation rooted in labouring practices structured by class relations establishes a gap between humans and their world. An understanding

following quote from Lukács, 'Thus thought and existence are not identical in the sense that they "correspond" to each other, or "reflect" each other, that they "run parallel" to each other or "coincide" with each other (all expressions that conceal a rigid duality). Their identity is that they are aspects of one and the same real historical and dialectical process' (Lukács, 1971, p. 204). To exemplify: every human practical activity comprises a 'mental' aspect, thought or idea, and an idea is always formed in a context characterized by human practices. There is an inseparable connection between actions and ideas: human existence is 'intentional', as Marx puts it. French psychoanalyst Jacques Lacan also points that out: what distinguishes humans from animals is the inscription of human existence and practices in a symbolic order. 'We feeble beings' says Lacan, 'need meaning' (2007, p. 15). Ideas and social contexts of practice are in a dialectical relationship: they 'cause' and 'effect' each other. As such, the mechanical tendencies of 'vulgar Marxism' must be rejected. Their relationship can't be grasped by static mechanical causal schemes: rather the interaction between thoughts and material contexts should be grasped as a process, a historical process.

Importantly, this does not mean that I treat elements of the social whole in a functional way, that I reduce the parts to some sort of functional requirement of the whole. Neither do I treat them as uniform, or identical. Parts are neither identical with, nor uniform to the whole, yet nor do they stand in isolation, unaffected by each other, universally and eternally unaltered. Parts are related in a way that stresses their participation in one totality in process. One must take seriously the fact that they are different aspects of a single society, of one social form which is not identical or uniform but which comprises in its very unity, by *definition*, variety, discontinuity, non-linearity, conflict and contradictions. This explains the very fact that historical materialism can think beyond the fragmentation of capitalism, that it can seek unity in a context of fragmentation. It clearly shows that context does not mechanically determine thought, that thought is not a mere reflection of social context, and that social contexts also display discontinuity, non-linearity, contradictions and conflicts.

of the fundamental social mediations of this relationship can help solve the epistemological problem of the relationship between 'thought' and 'reality'.

Furthermore, on a political note, I do not adopt the standpoint of capital, but rather the standpoint of critique of the oppression and exploitation entailed in capitalist social relations. Such a standpoint requires a holistic conception of society, precisely because it aims at combating oppression. As Eagleton, speaking of the opposition between 'partial' ideological standpoints and some 'dispassionate' views of the social totality, nicely puts it,

For what this opposition fails to take into account is the situation of oppressed groups and classes, who need to get some view of the social system as a whole, and of their own place within it, simply to be able to realize their own partial, particular interests. If women are to emancipate themselves, they need to have an interest in understanding something of the general structures of patriarchy. Such understanding is by no means innocent or disinterested; on the contrary, it is in the service of pressing political interests. But without, as it were, passing over at some point from the particular to the general, those interests are likely to founder. A colonial people, simply to survive, may find itself "forced" to inquire into the global structures of imperialism, as their imperialist rulers need not do. Those who fashionably disown the need for a "global" or "total" perspective may be privileged enough to dispense with it. It is where such a totality bears urgently in on one's own immediate social conditions that the intersection between part and whole is most significantly established' (Eagleton, 1994, p. 182).

*

The conception of the social whole, in the history of Marxist thought, has faced a problem closely connected to the one of mechanical causality identified above: economic reductionism. The infamous 'base and superstructure' model has been identified by critics as a cause of Marxist 'reductionism'. Indeed, in order to infer mechanical causal relationships between distinct 'objects' or 'spheres', the latter had to be identified, named, 'entified'. Building on a metaphor put forward by Marx, most notably in his *Preface* to the *Contribution to the Critique of Political Economy*, these social spheres; economic, political, ideology, law, etc., were reified, and the Marxist conception of the social whole was fragmented in some Marxist contributions. The base and superstructure model taken as a theoretical blueprint is thus an example of both mechanical causality and economic reductionism. As Ellen Meiksins Wood argues,

The base/superstructure metaphor has always been more trouble than it is worth. Although Marx himself used it very rarely and only in the most aphoristic and allusive formulations, it has been made to bear a theoretical weight far beyond its limited capacities (E. Wood, 1995a, p. 126).

To be sure, this reification was not a phenomenon occurring only in some versions of historical materialism. On the contrary, it permeates to a great extent the majority of traditions in the social sciences, including modern economics (see Clarke, 1982). The Weberian tradition, for example, also reified discrete social spheres. The difference between the two traditions – Weberian and Marxist – is more a matter of causality: while Weberians privilege multi-causal explanations, so as to make ‘politics’, ‘religion’ and ‘economy’, for instance, all play a part as distinct reified spheres in the causal process, mechanical Marxists were said to privilege mono-causal explanations: the ‘economic’ sphere was ascribed causal power of determination over the other social spheres.

One of the finest expressions of this tendency to reify sets of social processes under discrete spheres such as ‘economics’ and ‘political’ in the Marxist tradition is found in the work of French philosopher Louis Althusser. Indeed, as others have noted (Wood, 1995; Thompson, 1995), Althusser is a great example of how the base and superstructure model, even when approached from a critical Althusserian perspective which rethinks causality, is left intact in its reified form.

In its standard ‘vulgar’ form, the base and superstructure model posits that the ‘economy’ forms the base of every society, whereas the political, juridical, and ideological spheres form the superstructure. The base mechanically determines the superstructure, i.e. the evolution of the economic structure dictates the evolution of the superstructure, as the latter passively reflects the former. Althusser despised the economistic variant of the base/superstructure model, but he also despised the humanist and historicist responses to this model which were formulated by other Marxists. For example, he thought that even if Gramsci’s critique of Bukharin, to take only one example, had to be made, Gramsci erred as much as Bukharin did (Althusser, 1965b, pp. 73-107).³⁰ It is not by reinstating human agency into the picture that Althusser wished to combat the economist and reductionist Marxism derived from the base-superstructure

³⁰ Bukharin, as Gramsci had noted, was one of the most prominent proponents of vulgar Marxism associated with Stalin’s vulgarization and destruction of the Marxist and Leninist heritage in the Soviet Union. For Gramsci’s critique of Bukharin see Antonio Gramsci (1971, pp. 419-72).

model. According to him, this solution only reproduces the myths of what he termed 'idealist anthropology'. He thought that the real solution lay in revision of the causal links and relations between 'base' and 'superstructure'. This revision entailed the construction of a more thorough theoretical model.

In his work, Althusser approaches this question by examining the nature and structure of Marxist dialectics, and its distinctiveness from Hegelian dialectics. He aims to show that ultimately, the Marxist conception of 'contradiction' has theoretical consequences in that it rejects such a thing as a simple contradiction (base) that would determine the others (superstructure). Drawing on Lenin and Mao, Althusser argues that even the most fundamental 'Marxist' contradiction - the contradiction found at the inner most central space of the base between the forces of production and the relations of production - is overdetermined, i.e. itself subject to the determination of other contradictions arising from the superstructure (2005, pp. 99-100, 206-24). Althusser thus challenges the idea of economic determinism by the base through ascribing 'relative' autonomy *and causal power* to superstructural levels.

There are two major features to Althusser's model. First, the economic base determines the other levels of society only 'in the last instance'. From this stems the second feature: the different levels of society are 'relatively autonomous' (1965b, pp. 43-44). The economic base is characterized by the contradiction between the forces of production and the relations of production. But that contradiction cannot be made solely responsible for the course of history. Drawing on Lenin's analysis of the Russian Revolution, Althusser argues that there must be at least 4 different levels of determination in the course of history: 1) the contradictions arising from the base, 2) the contradictions arising from the superstructure, 3) the contradictions of specific national traditions, 4) the contradictions of the international conjuncture. So, the contradictions arising from the base are not the sole determinant of events. Rather, it is the accumulation of contradictions stemming from different levels that creates the historical conjuncture (2005, pp. 97-116).

More to the point, what is meant, precisely, by this notion of 'last instance' determination? Although Althusser accumulates the misleading *figures de style* on this topic,³¹ there is a way, after all, in which the economy is determinant in society. For him, the 'last instance' means that the structure of the economic level ascribes to one level of the society the peculiarity of being dominant. In other words, it is the structure of the economy which determines which level is going to be dominant (2005, pp. 219-22; 1965b, p. 46). The dominance shifts from one level to the other by way of 'displacement', and a contradiction can become a target for revolutionary practice when it grows in importance through a process of 'condensation'. As Alex Callinicos (1976) suggests, this theoretical model would argue that in feudal societies, it is the structure of the economy that ascribes the dominant role to the political level. This is where lies the fundamental meaning of the conception of determination 'in the last instance' in Althusser.³² The economic base is thus always *determinant*, but not always *dominant*. However, much would be gained for the sake of exposition, from an Althusserian perspective, to speak of 'social production', with its historically varied character, as being 'determinant in the last instance', instead of a historically undifferentiated and reified 'economic' level.

This distinction is made even clearer in the conception of 'relative autonomy'. Although the *Structure à dominante* (the theorized social whole) in which the levels are situated is determined 'in the last instance' by the economy, each level is said to be 'relatively autonomous'. This is where the important concept of overdetermination gets its most forceful elaboration.³³ For example, the structure of the political level is autonomous because it shapes politics. But it also affects ideology (arts, culture, etc.),

³¹ Aphorisms such as 'its lonely hour never comes', when speaking of the determination in the last instance, are misleading, in that they suggest that the economy is never determinant in his theory. On the contrary the economy for Althusser is not always dominant, but always determinant.

³² Although the formulation is from Engels, Althusser argues that Montesquieu was the first to 'discover' the concept of a social totality determined in the last instance by one predominant level. See Louis Althusser (1974).

³³ Miriam Glucksmann notes that the concepts of overdetermination, condensation and displacement are direct borrowings from Freud, for who overdetermination describes: 'the representation of the dream thoughts in images through the condensation or displacement of several dream thoughts. Althusser uses it to describe the relationship between the parts of a social formation and the whole and to describe the effects of the contradictions in each level of the social formation as a whole' (Glucksmann, 1974, p. 100). See Louis Althusser (1965b, p. 51; 1976, pp. 100-101).

theory, law, economy, and so on. In return, politics is affected by the structure of the whole of society, and by determinations coming from the economy, the law, ideology, etc. Each level is thus thought of as: 1) autonomous, *i.e. as possessing causal power*, and 2) part of the social whole, 'relative' to it, *i.e. as being affected by the other levels of society and by the structured whole of society*. This gives birth to the ambiguous terminology of 'relative autonomy'. Each level of society is 'relatively autonomous'. It functions on its own. But it affects, and is affected, by every other level and by the structure of the whole - which is determined 'in the last instance' by the economic level. In this sense, the levels cannot be said to be completely autonomous, but neither are they passive reflections of some fundamental base (Althusser, 2005, pp. 206-24; 1965b, p. 169).

It is in this perspective that Althusser speaks of a 'given complex whole' (2005, p. 198). No one contradiction is playing out on its own; rather every level of society and every contradiction to which it gives rise are always already overdetermined by 1) the structure of the whole, 2) the effects derived from the relative autonomy of every other level and every other contradiction. Depending on the historical conjuncture and the economic level, one contradiction will be dominant, others dominated, but there is no special essence that would make one contradiction or one level *always* dominant.³⁴ Their articulation in the social whole makes it that there is always dominant and dominated levels and contradictions, what Althusser calls, following Mao, the law of the unequal development of the contradictions.

In the final analysis, the level's relative autonomy means just that. They are autonomous because they each are the products of a specific and distinct practice. But they are not totally autonomous, only relatively that is, because they are all ultimately the products of the general essence of production, *i.e.*, they are all products of social practice in general, they are united in the social whole. What Althusser calls 'structural causality' as a 'form of causality which is found in its effects', replaces mechanical causality, but notwithstanding the extent to which Althusser grants the differentiated social spheres the

³⁴ 'Il y a bien toujours une contradiction principale et des contradictions secondaires, mais elles échangent leur rôle dans la structure articulée à dominante, qui elle, demeure stable' (Althusser, 1965b, p. 217).

capacity to 'structurally' causally affect each other, the fact of the matter remains that the basic theoretical model of the whole is still made up of reified spheres.

Importantly, there is another fundamental way in which Althusser's model suffers from having been built on reified spheres. The separation between theory and reality which is found in Althusser's work, and its Spinozian justification (i.e. 'the idea of a dog does not bark'), prevents Althusser from grasping the relationship between thought and society. In his model, both 'relative autonomy' and 'last instance determination' are theoretical features. Althusser builds his model as a theory, and the relations between the elements of the theory are conceptual and logical. The Althusserian break between theoretical and empirical spheres ultimately makes the economic 'last instance' even further remote. Indeed, for Althusser, on the one hand the theoretical sphere is a realm of pure conceptual consistency, on the other hand empirical reality is a realm of contingency, agency and historical specificity. This results in the fact that the economic 'last instance' after all occurs in theory (it determinates rather than dominates), whereas in empirical reality's irreducible contingency, 'its lonely hour might never come'. Althusser's *figure de style*, misleading from a theoretical perspective, thus acquires a very interesting meaning from the perspective of empirical history.

Althusser's limitations underpin the tendency of this school of 'structuralist Marxism', despite all indications to the contrary, to conceive of sets of social processes in isolation from the whole in order to study them, to produce reified concepts, and to separate empirical history and theory. As a result, synchronic theoretical analyses tend to be privileged over diachronic historical analyses. This entails that 'history' cannot be grasped other than as a series of stroboscopic moments *separated* from one another in which structured wholes often appear as static reified structures. History as a process can't be tackled satisfactorily by such approaches, and thus explanations of historical change tend to lose heuristic value by giving in to ready-made accounts of 'contingency' when theoretical constructs are negated by historical experience.

*

However, if the reification of social spheres in the realm of theory is a widespread phenomenon, it is not the product of an illusion, or a defect in thought. The base and superstructure model is rather an expression of real objective social process of reification of social spheres under capitalism. As Eagleton reminds us, 'commodity fetishism, for Lukács as much as for Marx, is an objective material structure, not just a state of mind' (Eagleton, 1994, p. 186). Crucially, this 'objective reality' is a social product of *history*, and its analysis should be approached from a historical perspective. As Ellen Wood (1995) has emphasized, such a thing as an apparently 'pure' sphere of the 'economic' is in fact historically specific: it is a product of the historical transition from feudalism to capitalism. Indeed, the 'economic' and 'political' spheres were fused under feudal social relations, the appropriation of surplus was performed 'after' production, by 'extra-economic' means, such as military power, political coercion, juridical status, religiously constituted authority, and so on. The universalization of commodity production has created a 'purely' economic sphere in which appropriation is performed by 'economic' means, i.e. in the productive sphere *per se*. The production of surplus-value is made possible by the consumption, by a class of capitalists, of a very special commodity: the labour-power of 'free' and dispossessed workers, which has the property of creating more value in its consumption than it takes to reproduce it. This separation of the 'economic' and the 'political' meant the privatization of political powers of appropriation and the confinement of state power (the political) to a public realm. Capitalist societies, in that regard, are truly historically unique.

Social spheres are thus reified in capitalism, they take the appearance of discrete entities, with their own logic and their own rhythms. Althusser had also expressed that in terms of different temporalities ascribed to each spheres, fragmenting what he thought to be the error of a Hegelian time of 'expressive totality'. Gesturing to the multiplicity of social times though this move might have been, it left his model facing the conundrum of causal links being made between spheres that did not come into temporal contact, each following their own temporal path, reproducing, at the level of temporality, the theoretical fragmentation of the social whole and the reification of social spheres. As will become

apparent in what follows, there has to be a way to make sense of the *temporal relationship* between a multiplicity of social times *and* the totalizing tendencies found in capitalist social-property relations. From the perspective of a social whole in process, it is the *interaction and relationship* between multiple times in *social time relations*, not their *separation*, which needs to be interrogated.

According to Lukács' reading of Marx, this fragmentation of the social whole is a product of the capitalist division of labour, fragmentation of processes of production, and specialization of 'skills'. The academic disciplines that develop in the capitalist world tend to reproduce this fragmentation: they identify their 'objects', and tend to eliminate everything surrounding them in order to grasp their so-identified object free from 'interference'. The specialization of academic disciplines is thus to be understood as an expression of the fragmentation of social life under capitalism. As Marx argued, it is not 'the text-books that impress this separation upon life (...) [but] life upon the textbooks' (Quoted in Lukács, 1971, p. 104; on this topic see also Clarke, 1982).

What this tells us is that 'entifying' and reifying discrete social spheres, as the base and superstructure model does whether in its vulgar form or in its theoretically refined Althusserian form, actually leads one away from a conception of the social whole *and an understanding of historical process*. Dualisms and dichotomies emerge between 'politics' and 'economics', between state and market, economy and ideology, reality and consciousness, that leaves much of these models locked in antinomies and aporias. The *historical* character of the appearance of such 'spheres' should lead to a healthy form of relativism : on the one hand, what is 'economic', 'political' or 'ideological' varies from one social context to another, and from one historical period to the other. For example, as was just discussed, speaking of a purely 'economic' sphere, as we understand it in capitalism, hardly makes sense in feudalism. On the other hand, one should remain aware that the 'economic' is not a once and for all settled set of processes. By looking at the historical formation of an economic sphere under capitalism, one can see that what once were 'political' powers are now performed in the 'economic sphere' - think about for instance the power relations of discipline between employers and employees, the various

'codes of conduct' applicable inside the perimeter of workplaces, and so on. One can also point out how such a thing as a 'free' market requires a very complex set of institutional, legal and political institutions to ensure and support it. What is 'economic' in a given society, i.e. the basic processes in which it reproduces itself materially, is historically specific. There are no such things as universally 'discrete' spheres, although capitalist reification makes them necessarily appear as such.

The idea of an economic sphere universally and trans-historically 'determining' ('in the last instance' or 'mechanically') other social spheres is thus as untenable as the Weberian idea of discrete spheres interacting in multi-causal determinations. De-reifying such spheres leads one to consider parts and processes in capitalist societies as parts of a social whole in process. Ideas and contexts, in this way, do not have to be conceived of as evolving in separate enclosed realms.

From relations of production to social-property relations

I want to point out one of the most fruitful ways to consider society as a whole in process, and challenge the reification and compartmentalization of social processes, by analyzing the transition from a concept of relations of production to a concept of *social-property relations*. First, with such a concept, one can avoid economic reductionism by de-reifying social spheres. Such a de-reification is performed by historicizing the so-called spheres. Second, in place of mechanical causality, one is led to consider historical processes.

While historically, versions of historical materialism have articulated explanations of history and economic and social development through a conception of the interaction between forces of production and relations of production (see Martineau, 2012), Robert Brenner (1985a, 1985b) has shown in his study of the transition to self-sustained economic development in early modern England, that the cluster of phenomena which should be ascribed explanatory power in analyses of historical processes are dynamics of class conflict and social-property relations.

In Marxist conceptual vocabulary, forces of production refer to the socio-technical level of development of human's interactions with nature, as well as to the relationship between direct producers in the labour process. The relations of production, for their part, are more specifically referring to class relations. The concept seeks to encompass the cluster of economic, legal, political, religious, military, cultural, etc., forms displayed by class relations. One very influential hypothesis in the history of Marxism is that history is driven by the contradictory relationship between forces and relations of production. For example, under capitalism, forces of production tend to socialize production, while relations of production, characterized by private property, tend to individualize distribution. Contradictions between tendencies at work in forces of production and in relations of production are said to reach a point triggering historical change. Major historical studies have used this postulate (see Anderson, 1979, 1996, among others). For example, the transition from Antiquity to Feudalism has been explained in this way (for a critique see E. Wood, 1995a, pp. 129-134).

However, many accounts in Marxist social theory, history and political economy have had a tendency to put the emphasis on forces of production which develop steadily until they encounter the 'fetters' of existing relations of production. The further development of productive forces necessitates new relations of production, whence crises and revolutions. This emphasis on the development of the forces of production ends up making it the independent variable around which, ultimately, everything else revolves. Their development is taken for granted, as a 'law of history', and this in turn leads to *technological determinism* (see E. Wood, 1995, pp. 108-145). However, as Ellen Wood notes, neither feudal nor slave societies, for instance, were characterized by the incessant or steady development of productive forces. This Marxist theory of history thus exhibits the theoretical error of universalizing a feature which is specific to capitalism. Indeed, capitalism's unique propensity to develop the forces of production is ascribed to other modes of production. The net result is that the theory of history which puts the emphasis on the development of productive forces ends up analyzing historical phenomena from the point of view of a unique feature of capitalism that can't be said to characterize other

modes of production in the same way. Moreover, the theory of history that focuses on the development of the forces of production runs the risk of relegating historical processes of social conflict and relations of production to a passive role, to the role of an epiphenomenon.

As touched upon above, many of those who did take into account the relations of production have had a tendency to reify social spheres, or to analyze class conflict through an explanatory logic that took this reification for granted. In models which recognize the importance of relations of production, social relations still tend to be conceptualized in opposition to economic 'laws'. The 'history of class struggle' is then seen as the 'empirical' manifestation of the 'law' of the contradiction between forces and relations of production, which presupposes, as I have noted, a steady and incessant pace of development of productive forces for all modes of production. All of this strikes one as odd, since Marx's innovation was precisely to show how 'economic laws' *are* historically constituted social relations (see also E. Wood, 1995, pp. 21-24).

One way to remedy the limitations of such a conception of relations of production as 1) a fixed class structure which follows the inexorable development of productive forces and 2) enclosed in reified spheres, is provided by the concept of social-property relations. This concept points to the nexus of legal, political, economic and cultural class relations that govern the appropriation of labour surpluses in a given society. Here, I understand social-property relations as referring to the ensemble of social relations governing and emanating from the conflict between producing and appropriating classes, and the exploitation of the former by the latter. I view social-property relations as an historical *process*, and not a once-and-for-all fixed structure.³⁵ The mutual interaction between class and social conflict and social-property relations gives rise to certain class specific 'rules of reproduction', which tend to ascribe a logic of development to specific socio-historical contexts. Crucially, this concept helps to re-inscribe the development (or not) of productive forces in its social context, and de-reify social spheres by *historicizing* their very existence. What this means, is that each socio-historical context is treated on its

³⁵ The original conception is found in Robert Brenner, 1985b. See pages 274-5 among others. See also Dufour and Rioux, 2008.

own terms, the social-property relations of a specific socio-historical context might exhibit legal and/or political processes that are in fact determinants of 'economic' life and vice-versa; processes are not ascribed to an *apriori* delimited or reified 'sphere'.

Historian Robert Brenner had first forged this concept when he argued that the problem of diverging developments of Western and Eastern Europe following the conflicts and breakdowns of the late medieval period is better approached by looking at the historically specific 'rules of reproduction' emanating from dynamics of class conflicts and social-property relations (1985a, 1985b). Moreover, the diverging developments of areas in Western Europe *per se* can be analyzed by examining differentiated social property regimes – politico-institutional forms taken by social-property relations (see also Teschke, 2003, pp. 7-8), and by the constraints and possibilities that they either impose or offer. For example, the relationship between class conflicts and the differentiated class structures founded on different social-property relations in France and England in the early modern period led to different forms of peasant revolts: directed against landlords in England, and against the absolutist state in France. This was due to the different social-property relations between peasants, landlords, land and the state, and how these differences shaped, and were shaped by, class conflicts. For example, in France, peasant property was consolidated whereas in England peasant proprietorship was disintegrating.

Ultimately, it is the historically specific relationship between class and social conflicts and social-property relations in the early modern English countryside that permitted and encouraged the endogenous historical emergence of a transitional phase between feudal social-property relations and capitalist social-property relations, a phase which has been termed 'agrarian capitalism' (more on that in chapter II and III). Those diverging developmental paths are thus not 'economically determined' in the sense that they can be explained by the level of development of productive forces. Rather, differentiated forms of interaction between class and social conflict and regimes of social-property relations are directly responsible for 'economic' 'development' or

'underdevelopment'.³⁶ The point of focus for analysis then should lie in the relationship between class conflicts and social-property relations, since the latter tends to orient the former, and the former can transform, even sometimes radically, the latter.

The concept of social-property relations thus helps grasp the complexities of socio-historical processes, but from a perspective that historicizes and de-reifies social spheres. Moreover, it helps one grasp society as a whole in process. Considering social-property relations as a key concept toward a grasp of the social whole in process enables the analysis to historicize social struggle, consider socio-historical development as open-ended, and, most important for my study, point to the unity between ideas and 'material' processes, between thought and existence. As I will suggest, the 'idea' of time, in any given socio-historically specific set of social-property relations, has very important 'material', even 'economic' aspects to it, as well as bringing together a whole set of process that could otherwise be seen as different 'legal', 'cultural' or 'political' processes. Even more fundamentally, I will seek to show that social-property relations also entail socio-historically constituted *social time relations*. The remainder of this dissertation will shed light on this concept.

The study of time as it relates to the methodological and theoretical issues raised above.

This study of time thus strikes at the heart of the methodological and theoretical issues raised above. At the methodological level, my study of time stands at the crux of the issue of the interpenetration of ideas and context. I will suggest further ways in which ideas and context are inseparable precisely in exploring the links between time as a social practice and time as a concept. I will point out how social time relations in capitalism lead to a reified and alienated conception of time in cultural and philosophical expressions and developments precisely because social processes in capitalism tend to alienate and reify time. In this study, I will thus pay considerable attention to the social context and general social (non-mechanical) determinations that inform conceptions of time. I will relate

³⁶ For the original argument see Brenner, 1985a, pp. 30-62.

conceptions of time to social processes and I will ultimately propose to de-reify the concept of time by socializing it.

This study of time also strikes at the heart of the theoretical issues raised above. Considering time as a social phenomenon also allows one to see in what ways conceptions of time and history are related to prevailing socio-historically specific social-property relations. For instance, it becomes relevant to ask why time is what unifies the social whole, which is otherwise fragmented in capitalist societies. Such a study helps grasp why such a thing as a 'World Standard Time' is created and perfected in simultaneity with capitalist industrial development. Why does clock-time in capitalist societies pervade the whole of society, and does not stay confined to one 'sphere'? I will enquire into *the historically unprecedented fusion of labour and time* in capitalism in order to address such questions. A study on time thus opens the door to conceive of society as a whole in process. And it also points to, crucially, the determination of capitalist social time relations as a process characterized by social struggle, as a 'struggling entity'.

All along this study, but especially in my treatment of capitalist social time relations, discussions will pivot around a distinction between concrete time and abstract time. Concrete time is understood as a function of events, actions, human practices and concrete processes of change. Abstract time, on the other hand, is a time independent of events, it is expressed most notably as a linear, continuous and homogenous 'empty' time, in which events and processes are located and or measured. Concrete time would thus here be understood as a dependant variable, while abstract time would be considered as an independent variable.³⁷ These definitions will be refined throughout the discussions, and my discussion of abstract time might even call for some revisions with regards to the notion of abstract time as an 'independent' variable.

The study of time as a social phenomenon also points to its ideological aspect. Indeed, considering time as a social phenomenon also allows one to see in what ways conceptions of time and history are related to prevailing socio-historically specific social-

³⁷ For a similar distinction, see Postone, 1993, pp. 201-2.

property relations. Social-property relations are processes which are contested and resisted. As such, they entail fluctuating social practices and conceptions of time, social time relations, which are also contested and resisted. Accordingly, conceptions and social processes of time and temporality are necessarily linked to, and shaped by domination and resistance. I am thus not homogenizing different discourses, structures and conceptions as neat layers of a homogenous social context which produces homogenous conceptions. On the contrary, I show how 'time' is a contested practice and a contested concept. It is here that the door through which one can enter the questions of the ideological and political aspects of time can be opened. If time as a social practice and as a concept is embedded in social conflicts, it follows that it is shaped by conflicting social processes and conceptions which represent different class and group experiences. This conflictual aspect of time will be discussed in chapter III. I will show how capitalist processes alienate time, separate it from human beings' and socio-natural concrete time, and why such social processes give rise to conceptions of time which express a fundamental dichotomy between 'worldly' time and 'human' time, which I will address more in depth in chapter IV. I must now turn to the concept of 'social time', and delineate further the basic conceptual formulation of 'social time relations' which will serve as a basis for this study.

C) Time in the social sciences: 'Social time'

The problematic of time has been of great interest in the social sciences. Although some commentators still underline the fact that social theory should take time more seriously, it is important to recognize that the field as a whole did contribute in a fundamental way to the study of time, and continues to do so. As Barbara Adam points out with regards to the allegation of time having been neglected in social theory, 'when we look more closely it becomes apparent that the founders of the social sciences have been concerned to encompass time in their respective theories' (2004, p. 22). Adam points to the theories of Karl Marx, whose work I will analyze more closely in chapter III, but also to the work of Max Weber, Émile Durkheim, George H. Mead and Alfred

Schütz, among others. In a similar fashion, Gerhard Dohrn-van Rossum notes that time and the various concepts which are related to its understanding as a social phenomenon have been 'important themes of historical and anthropological research' (Dohrn-van Rossum, 1996, p. 2).

In the same line of thought, much contemporary work in the social sciences not only takes time seriously, but makes time and temporality their object of study. The literature on time is a burgeoning one and many thinkers and scholars nowadays endeavour to study the broad relationship between time and society.³⁸ Such studies ask crucial questions for the social sciences and raise the issue of potential relationships between different disciplines and fields. Andrew Abbott, for example, illustrates the divide between history and sociology as one between the study of a 'past' and the study of the causal regularities that govern a 'present'. He then underlines several contributions, such as the work of Bergson, Alfred North Whitehead and Mead, which can help bridge the 'temporal' divide between these two disciplines (Abbott, 2001, pp. 209-39), and take us closer to interdisciplinary conceptions of '...a world in process. A World of interaction' (Abbott, 2001, p. 239). Throughout this study, I will put to use, as well as critically engage with, such contributions to the study of time in the social sciences.

As I have just noted, Adam points out to the classics of social theory, and goes on to discuss how time figures in their respective theories. Max Weber, for one, made insightful headways into the question of social time. In his treatment of the role of the Protestant ethic of time as an economically manageable and organizational resource, he gestured to the fundamental distinction in social conceptions of time between this Protestant ethic and the conceptions associated with the medieval Catholic Church, in which time belonged to God and trade in time was forbidden (Weber, 1964, see also Le Goff, 1977, pp. 46-79). More broadly, as Adam summarizes, Weber 'established an association between general processes of rationalization, the puritan attitude to work and the appreciation of time as a precious resource to be allocated and spent with diligence and frugality' (Adam, 2004, p. 41). Weber took time seriously enough to integrate its

³⁸ The foundation of the multidisciplinary journal *Time and Society* in 1992 illustrates the burgeoning of this field of study.

organization, and the cultural attitudes towards it, as a causal factor of social structuration and social change and he established time-consciousness as an important topic in the study of historical mentalities (see also Dohrn-van Rossum, 1996, p. 10).

Another classic thinker who took time seriously was French sociologist Émile Durkheim. Starting from the premise that society is an independent set of social facts that are not determined by individual consciousness, Durkheim had to postulate a 'social time' that transcended individual experiences of time. In contrast with Kant, he did not conceive of time as an *a priori* intuition, but rather as rooted in the social. The nature of society, its collective life, symbols and concepts, make social time a collective feature, he thought. The great diversity of social representations of time across the globe meant that social time is socio-culturally determined and variable. Although social time appears to the members of a society as an a-temporal frame, it is indeed made and remade as an expression of a collective rhythm of activity (Durkheim, 1968, see also Adam, 2004, pp. 45-9).³⁹

Contributions from the social sciences could be said to have developed a conception of time which emphasizes its socially and historically produced/constructed character. This conception is often referred to as: '*social time*'. This social time is historically multiple: sociological and historical research focus on the social composition of this time, on how different practices and different rhythms of social life create socio-historically variable and multiple collective times. 'Every culture', as Rifkin elegantly puts it, 'has its own set of temporal fingerprints' (Rifkin, 1987, p. 9).

One main point that recent social theories of time teach us is to reverse the common assumption that the social field is something that exists 'within time'. One should rather conceive of time as within the social field. As Robert Hassan puts it, 'time fundamentally exists within the social field; it is not an overarching cosmic universe, as Newton would have it, one that we exist within. Time is social, in other words' (Hassan,

³⁹ Some other important attempts at addressing the problem of time include: Bourdieu, 1972, 1977, 1980; Giddens, 1979, 1984; Luhmann, 1976; Mead, 1934; Schütz, 1971; Kern, 1983; Sorokin, 1964, for whom social time-measurement was the 'most urgent need of social life', and as such an inescapable factor of social relations, and, more recently, Postone, 1993; Adam, 1995, 1998, 2004; Glennie & Thrift, 2009; Hassan, 2009, among others. See bibliography for more details.

2009, p. 42). Time *qua* social time is also increasingly seen as a way to bridge the gap not only between differentiated disciplines and fields of study, but also between one of the most enduring dichotomies in the study of time: a dichotomy we could summarize as being constructed between an 'objective-time-out-there' and a 'subjective-time-within-us'. In that sense, Paul Glennie and Nigel Thrift remind us that 'time can no longer be seen as "something out there" which frames us, as in the Newtonian *sensoria*. But neither is it a perception internal to human beings, "a purely subjective condition of our (human) intuition" (Kant) used "to frame...the multiplicity of beings and entities" (Latour)' (Glennie & Thrift, 2009, p. 66).

In this sense, what social time brings to the study of time is a gesture towards the resolution of what Paul Ricoeur's has called time's fundamental *aporia* between *cosmological* and *experiential* conceptions, which I will enquire about in chapter IV (Ricoeur, 1985). Whereas Ricoeur wants to overcome the *aporia* through a poetics of narrativity, I shall here follow the path opened by conceptions of 'social time'. Since society mediates between humans and nature, what I am looking for here is a conception of time that is neither merely an object of nature, nor merely a feature of human consciousness, but rather rooted in the social activities mediating between humans and nature.

D) Norbert Elias, Barbara Adam and time studies: towards a concept of social time.

One of the most forceful elaborations of the concept of social time is found in Norbert Elias's *Time: an Essay* (1992). The insights found in this essay will take my argument several steps further. It is here that I will be able to begin to establish more solidly the theoretical bases upon which my study of conceptions and practices of time will stand. First, I will reconstruct Elias' conception of time, as it is found in this famous essay. Second, I will draw out from it, as well as from other contributions such as Adam's (1998, 2004), some conceptual tools and insights needed in order to move the discussion forward.

Elias and dualisms

Given the nature of my discussion up to now, a good way to delve into the crux of problems raised by Elias is to look at his critique of dualisms: the nature-society dualism, and the individual-society dualism, a problem which I have raised since the very start of the chapter. While I have noted how theories of time seem to be classified, according to commentators, in two camps – cosmological vs experiential -, Elias articulates this question by critically addressing the separation between nature and society on the one hand, and the individual and the group on the other, both of which he finds related to the academization of disciplines in the practices of knowledge production in modern societies. He proposes to go beyond this separation in his study of time, 'The isolated individual no longer stands at the center. Nature is no longer a world of objects existing outside the individual; society no longer only a circle of others among whom the individual finds itself as if by chance' (Elias, 1992, p. 28). Let me discuss this line of thought, especially with regards to the nature-society dualism and issues of social time.

For the German sociologist, there are many reasons why the nature-society dualism has been integrated in our modes of thinking and modes of discourses. While for Mészáros, as I noted earlier, dualisms and dichotomies characterize the main methodological underpinnings of social theory in a capitalist context, Elias articulates the problem around two elements which particularly stand out: one is the nature of actual social development, the other is the differentiation in the sphere of knowledge between natural and human sciences,

The steady expansion of human societies within the non-human, the "earthly" sector of the universe [...] has led to a mode of discourse which gives the impression that society and nature exists in separate compartments. The divergent development of natural and of social sciences has reinforced this impression (1992, p. 44).

The divergent development of science, the second factor identified by Elias, has also produced numerous conceptual dichotomies which have reinforced how nature and society seem to be isolated, independent, even antagonistic and incompatible with each other. Those existential divisions are in fact, for Elias, 'different values attached by different groups to different, though related, levels of the universe' (1992, p. 86). While

for Marx and Lukács, it is the fragmentation of social life which is expressed in the separation of academic disciplines, Elias reverses the assumption with regards to the split between social and natural sciences, as for him 'we have got into the habit of conceptually splitting the world largely in accordance with the divisions between different academic specialisms' (1992, p. 86). Power-knowledge struggles between groups engaged in natural sciences and groups engaged in social sciences have contributed to the division of the world into separate objects of enquiry. The object of natural sciences has become a 'real', independent object: modes of scientific discourses in the natural sciences have isolated 'nature' as an 'object', existing on its own, separated from 'subjects', social humans. This divide now appears to be a feature of the world itself. Moreover, the dichotomy between nature and society has been reinforced, at the level of the scientific development, by the success of natural sciences in the exploration of 'nature', a success that has given them a status of model for all other sciences, social sciences included. The specific mode of 'rationality' of natural sciences has become the standard for all sciences.

Whether one shares the perspective of Marx and Lukács on that issue, or Elias', the fact remains that nowadays 'time' is a concept that seems to us to have been grounded firmly in natural sciences.⁴⁰ As such, as Elias argues, to examine it in terms of human societies or experience, or in other words in terms that are not reducible to mechanical laws of causation, appears to immediately condemn the project to the limbo of metaphysical, or plainly irrational, endeavours. For Elias, this explains, why sociology has not focused on the examination of time in terms of mechanical laws of causation. Opinion, as well as power struggles between academic branches, has made it so that 'time' is a concept which seems to belong to theoretical physics. According to common opinion, Einstein *has* formulated a theory of time; sociologists might thus feel that this concept is out of their heuristic reach. For Elias, we have thus ended up with two concepts

⁴⁰ An exhaustive treatment of the concepts and practices of time of contemporary theoretical physics are outside the disciplinary scope of this dissertation in particular. However, I do not think they are outside of the heuristic reach being deployed here, as is shown by my discussion of Newton's conception of time. For the purpose of this dissertation, I will limit my comments on contemporary physics and time to a very short appendix to be found at the end. However, this appendix will be expanded in a future study.

of time which have followed the lines of the nature-society divide: time has become separated between physical time and social time, and their fundamental relationship is obscured. On the one hand, we have 'physical time' which is a concept at a very high level of abstraction, and on the other hand we have 'social time' which refers to socially produced time-regulatory devices.

The problem with this dichotomy in the study of time is that the resulting two conceptions, physical time and social time, are treated as different concepts that are explored independently from one another, 'The problem of time, however, is one which we cannot hope to solve so long as physical and social time are examined independently of each other' (Elias, 1992, p. 44). What Elias brings to light is that time is a problem that cannot be classified in those terms, that cannot be separated along the lines of this dualism. In order to study time, one has to go beyond this dualism, and see how nature and society are connected to each other. As Elias exemplifies

it might be enough to think (...) of the priest who tried to discover for his people the "right time" for sowing, by observing the passage of the moon through a particular spot on the horizon. Here were people, as they are everywhere, dependent on the fruits of "nature" for their food. They were dependent on the rain which made the seeds grow; they observed the movement of the moon – a physical movement – in order to find out when it was good for them to sow – a social activity; and they started observing the moon – a social activity – in order to find the best way of satisfying their hunger – a natural impulse (1992, p. 89).

Symptoms of the pervasiveness of such a dualism are found in many studies of social time, amongst them a classic contribution to social time; Jeremy Rifkin's *Time Wars*. While Rifkin crucially recognizes the social power relations which underline every society's conception and organization of time leading up to 'battle over time values' (1987, p. 13), he nonetheless reproduces a dualism between 'social time' and 'natural time' as 'two *distinct* and *irreconcilable* temporal worlds' (1987, p. 54, my emphasis). While for the American essayist, these two distinct worlds remained attuned for most of human history, modernity and its frantic pace has broken this harmony between the two temporalities, triggering an unprecedented 'temporal crisis' (Rifkin, 1987, p. 58).

Elias' diagnostic is a good opportunity to clarify here how the present study conceives of the relationship between nature and society. By building on McNally's

critical re-dialectization of the nature-society dualism in his move toward a historical materialist theory of language, one can come to an understanding of the relationship between nature and culture, and natural and cultural – social - temporalities. In his *Bodies of Meaning*, McNally constructs a theory of language and bodies which goes beyond this dualism.⁴¹ He points out how this dualism is translated into various other dualistic conceptual pairs, such as body-consciousness, thing-meaning, and so on. The crucial point here for the Canadian theorist is to come to an understanding of how the two poles, nature and society, are simultaneously present and in tension in phenomena. For example, human bodies are at the same time results of natural evolution *and* results of socio-historical conditions, '*homo sapiens sapiens* is simultaneously human (historical) and natural' (McNally, 2001, p. 159). Such an understanding leads to the consideration that 'society is naturally conditioned and nature socially mediated' (McNally, 2001, p. 121).

Following McNally and Elias, one recognizes that it becomes hazardous to study phenomena such as time inside a framework that separates nature and society. In terms of history, McNally points out that natural history forms one realm of temporality, and while human history is continuous with it, it also involves a crucial discontinuity,

the emergence of cultural, language-using, toolmaking primates introduced a new order of temporality, the time of human history. This temporality does not transcend natural time, it mediates and supplements it, introducing different orders of determination' (McNally, 2001, p. 8).

As such, different orders of determinations do exist between nature and society in terms of time and temporality, but the *a priori* separation of these two orders, instead of the acknowledgment of their continuities and discontinuities, might have disabling effects for theoretical endeavours into the question of time, such as making the theory incapable of grasping the relationship between intersecting temporalities which bring together bodies and their environments, social processes and biological human needs, human activities and climate, etc. Recognizing the socially mediated character of 'nature' and the

⁴¹ When he encounters the dualism well ingrained in Valentin Voloshinov's theory of the sign, McNally points out that nature and culture must be understood as different orders of temporality, but which mediate each other in human experience. As such, one can read McNally as gesturing to the simultaneous presence of *both* natural and 'cultural' time in human phenomena.

embedded impacts of 'natural' processes on society might help bring about more comprehensive understandings of the question of time and temporality.

Accordingly, in what follows, I will not speak of 'natural time', but of 'socially mediated natural processes', or 'socially mediated natural time'. I will base my discussion on the premise that time is both natural and social: 'social time' cannot be thought of without reference to the conditioning determinations brought about by natural phenomena, just as the latter cannot be properly conceptualized and addressed without a recognition of their always-already socially mediated character. Natural phenomena such as tides, solar or moon revolutions, atomic pulses, are socially standardized continua of changes, and biological and physical sequences of change, stability and discontinuity are ingrained in every form of social time relations (more on that below).

In terms of time and temporal practices, what I mean by 'socially mediated' is quite simple. I would point in a direction similar to the one gestured to by Adam's expression that humans 'impose a cultural will on time' (Adam, 2004, p. 95). More precisely, I suggest that humans socially mediate natural cycles of change in the sense that they alter, funnel, use, coordinate, divert, channel, exploit or conserve them, in order to survive and reproduce. For example, the human use of fire is a way of socially mediating the natural cycles of change: it alters the natural cycle of light and dark, of heat and cold, by temporally prolonging heat and light. I will discuss below how Adam's work also formulates critical insights on the nature-society dualism which echo those found in Elias and McNally's work. I will also, throughout the remainder of this dissertation, reaffirm and refine what has just been laid out here: time has to be thought of as both natural and social. Let me for now pursue further aspects of crucial importance in Elias' discussion.

Time and Timing

A further way in which Elias articulates the problem of time is found in his distinction between time and timing. 'Time', considered as a natural phenomenon, cannot be studied apart from 'timing', a social activity. Since timing almost always involves

'tying up' natural sequences with social ones, this dichotomy between social and physical time has to be rejected, 'if one explores time, one explores people within nature, not people and nature set apart' (Elias, 1992, p. 97). Accordingly, Elias takes his argument on the nature-society divide one step further by arguing that the conception of 'time' *qua* natural phenomena has its origins in human social activities of 'timing', and not the other way around. These origins, according to him, have been obscured. Consequently, the examination of the concept of time should therefore be based on the historical analysis of the social activities of timing.

Following this line of thought, Elias argues that 'time' is not a universal category, nor an ontological being. The key to this argument lies in the empirical observation that the human experience of time has changed and continues to do so. Differences between societies with respect to the social organization and experience of time are historically very sharp. Elias points for example at the differences in kind between social time in contemporary societies versus time-codes which prevailed in 'simpler' societies,

'The social code in the simpler societies contains few time-signals, and those few are all related to specific occasions; none of them approaches the ubiquity and the high-level synthesis characteristic of the time-signals of members of industrial nation-states' (1992, p. 160).

Elias thus goes on to consider the concept of time in the light of human timing practices. Timing practices, according to Elias, respond to timing problems which occur in the development of societies, "'Time", or more correctly "timing", proves to be a means of orientation elaborated by human beings in the course of centuries in order to perform precisely specifiable social tasks, including the measurement of movements of heavenly bodies' (1992, p. 82). Social activities and organization pose timing problems which require the members of social groups to perform 'an active synchronization of their own communal activities with other changes in the universe' (Elias, 1992, p. 49). One great leap in the development of social time and timing practices, according to Elias, is when people start actively producing their food. In other words, problems of active timing come to the fore notably with the advent of agriculture. The domestication of plants, for

example, creates practical social needs which require specific timing practices, and consequently shape time-experience.

Elias goes on to argue that priests have generally been the time-keepers of early agricultural societies, and that when larger and more complex societies and states developed, state authorities began to perform timing functions. The state absorbed more and more the function of determining when certain social activities would be undertaken. The setting of time became a monopoly of the state. Accordingly,

The social need for an orderly and unified time-reckoning varied in accordance with the growth and decline of state-units, with the size and the degree of integration of their peoples and territories and the corresponding degree of differentiation and length of their commercial and industrial ties (Elias, 1992, p. 54).

What Elias is suggesting here, is that the more complex societies have become, the more 'urgently' timing problems have been posed.⁴² The responses to these practical social problems have often taken the form of social institutions of time regulation such as calendars. These institutions are *social* realities. They are not established by 'nature', but rather reflect how societies have regulated their social practices according to what was *chosen* as a 'natural' standard,

The Gregorian reform of Julius Caesar's reform of the old Roman calendar was the last attempt, so far, to provide a calendar system for a social year which, over the centuries, did not diverge too much from the 'natural year', that is, from the time in which the sun – in relation to men as observers and centers of reference – returns to a point in the sky which has been singled out by them as a point of departure (Elias, 1992, p. 55).

It is by approaching the problem of time in this way, i.e. by looking at human *timing* activities, that Elias shows how it is social time that underpins the human 'discovery' of natural time, not the other way around. If today people largely experience 'time' as an even, uniform and continuous flow, it has not always been the case. For example, the conception of natural time as a continuous flow is itself a product of the development of social time,

⁴² It might be problematic to maintain that timing problems are more 'urgent' in industrial societies than the need to temporally articulate agricultural practices such as planting and harvesting in agrarian societies. Perhaps Elias' use of the term 'urgent' (1992, p.54) should here be read more as a greater pervasiveness, frequency or generalization of timing problems in more 'complex' societies.

Ptolemy used [the] Babylonian era time-scale, the oldest and longest available to him within his knowledge continuum, for the construction of his model of the physical universe (...) Today, it is often taken for granted by philosophers and, perhaps, by physicists that time flows in one direction, and the flow of time cannot be reversed, although Einstein's theory, while maintaining the serial order of time, questioned its unidirectional character. It is hard to imagine that physicists could have developed the concept of a unidirectional and irreversible flow of time within their sphere without the slow and difficult emergence of social time-scales, with the help of which one could accurately determine the non-recurrent, continuous sequence of years, centuries and millennia (Elias, 1992, p. 57).

The emergence of these social time-scales is linked with the establishment of 'time' as a measuring device for long non-recurrent time-sequences. This,

was possible only when social units such as states or churches had the character of long-lasting continuum of changes within which living groups – usually ruling groups – found it necessary for the functioning of their institutions to keep alive the memory of the continuity of these constitutions in a precise and articulate manner (...) The emergence of long-lasting and relatively stable state-units, in other words, was a condition of the experience of time as a uni-directional flow (Elias, 1992, p. 57).

In the same line of thought, the development of the highly abstracted concept of physical time is tied up with the development of the social requirements of people. Social time encompasses the concept of physical time, and physical time has only branched off from social time quite recently in the history of humanity. Indeed, as Elias pleads, the modern ascendance of a concept of 'natural' time over a social one should not obscure the fact that such a concept of 'natural time' is a product of the timing of nature through the use of human-made devices. Elias argues that such practices emerged as late as with Galileo, who was the 'first' to use time-pieces in order to measure purely physical sequences,

never before had human-made time-pieces been used in this manner as a measuring rod for physical processes. The clepsydra, an elaborate version of which he used in his experiments, was traditionally a timepiece employed for timing human affairs. It was a social time-meter. Timing had been human centered. Galileo's innovatory imagination led him to change the function of the ancient timing device by using it systematically as a gauge not for the flux of social but of natural events. In that way a new concept of "time", that of physical time, began to branch off from the older, relatively more unitary human-centred concept. It was the corollary of a corresponding change in people's concept of nature. Increasingly, "nature" assumed in people's eyes the character of an autonomous, mechanical nexus of events which was purposeless, but well ordered: it obeyed "laws" (1992, p. 115).

This discussion illustrates the emergence of a concept of physical time from the broader matrix of social time (whether or not we agree with Elias' depiction of Galileo as the innovator in this regard).⁴³ The concept of time has thus come to be envisaged from a perspective in which it appeared as an unchanging variable of physical events, while in another sense 'time' had the appearance of a social institution, a regulator of events, a human experience. Those two times came to be regarded as possessing different values: natural time was 'real', whereas social time was a mere human convention (Elias, 1992, p. 116-7).

Such an examination of timing practices leads Elias to articulate his concept of time. He conceptualizes *timing* as the connection, by people, of two or more sequences of continuous changes. Such a connection is based in human capacity of synthesis, of which one aspect, for example, is memory. One of the sequences serves as a standard to measure the others. In this sense, timing is an intellectual act of synthesis, of putting in relation two or more different sequences. These sequences can be very different from one another: the movement of heavenly bodies and the changing relations between people are in concrete terms very different, yet humans measure the latter with the help of the former. What these discrete sequences of change have in common that permits them to be put in relationship through the social activity of timing is that they change in a regular sequence order. The solar year can be used to measure processes of state formation, or personal changes in an individual. For Elias, the concept of time refers ultimately to what these sequences share in common: they change in regular sequence order.

This connecting activity at the very basis of the concept of time cannot be understood on a purely 'natural' level; Elias' definition of time implies fundamental participants: humans in society. Indeed, for time to be perceived in the first place requires 'focusing-units', human beings, endowed with a specific capacity for synthesis. The perception of event A, B, and C as happening 'in time', as a sequence, requires beings

⁴³ One could for instance make a similar argument to Elias' with regard to the Greek Antikythera mechanism. Ancient Greek timing devices were comparably more complex than any other ancient society, and by many means comparable in 'precision' to some of the best early modern clocks.

endowed with this potential for synthesis which for Elias is activated and patterned by experience. This potential for synthesis is characteristic of humans and of the way they orient themselves. 'Time', in this sense, is the product of 'timing' activities performed by humans, it is a way, a means, of *orientation*, 'that which one today conceptualizes and experiences as 'time' is just that: a means of orientation' (1992, p. 38). What humans possess intrinsically (and socially), is not an *apriori* sense of time, but rather a capacity for *synthesis*. It is from this capacity for (symbolic) synthesis that the concept of time has evolved through the timing practices of social groups.

The word time, then, for Elias,

is a symbol of a relationship that a human group, that is, a group of beings biologically endowed with the capacity for memory and synthesis, establishes between the two or more continua of changes, one of which is used by it as a frame of reference or standard of measurement for the other (or others) (1992, p. 46).

What we call time is

a frame of reference used by people of a particular group, and finally by humankind, to set up milestones recognized by the group within a continuous sequence of changes, or to compare one phase in such a sequence with phases in another, and in a variety of other ways (Elias, 1992, p. 72).

Elias' work thus leads to the consideration of time as a complex network of relationships emanating from the practices of timing as a synthesis, an integrating activity, an act of synchronization between discrete and different sequences of change which need not be only conceived of as 'intellectual', as Elias has it, *but also as encompassing bodily processes with social practices and behaviours*. In such a timing activity, sequences at all levels of the universe, physical, biological, social, personal, can be put in relationship, 'At the present stage of development, time, as we can see, has become a symbol of a very wide network of relationships, in which sequences on the individual, social and non-human natural planes are interconnected' (Elias, 1992, p.15).⁴⁴

For Elias, it is only at the human level that natural processes, such as the solar year, can be symbolized at such a high level of synthesis. A symbolic synthesis such as

⁴⁴ For a multidisciplinary theory of time which seeks to integrate six fundamental levels of integrative temporalities, called the 'hierarchical theory of time', see Fraser (1999, pp. 21-43).

time entails a long process of learning which has been handed down one generation after the other. Indeed, as Rifkin puts it, 'Every culture inculcates its newest members by way of an elaborate and often complex process of temporal entrainment' (1987, p. 56). Accordingly, every individual belonging in a given society must learn, as a child, the socially prevailing concepts and practices of time. As a means of orientation in the social group, children must internalize this 'time' in order to become a functioning adult in that society. In capitalist societies, for instance, the school system is the central institution through which clock-time is taught and learned (Adam, 1995, p. 59 and following). The mere fact that children in modern societies need between 7 and 9 years to 'learn time', that is to read and understand accurately the symbolism of watches and calendars and to adjust their conduct accordingly, points to the fact that time is not merely 'innate' and 'natural', but rather is socially produced and embedded,

self-regulation in terms of 'time' which one encounters almost everywhere in later-stage societies is neither a biological datum, part of human nature, nor a metaphysical datum, part of an imaginary a priori, but a social datum, an aspect of the developing social habitus of humans which forms part of every individual person (Elias, 1992, p. 149).

This should be kept in mind for later, for it points to how in such processes of 'acquiring time', the social regulation of time specific to a form of social time relations is individualized by society's members and their personal time-consciousness. Such regulation and normalization is modelled along the prevailing *social time regime*, understood here as the politico-institutional forms taken by social time relations.

What Elias gestures to, namely, that time is the synthesis of a cluster of different temporal relations, leads the enquiry to what Adam will call, as I will discuss below, 'timescape'. But before I get to Adam's concept, I want to sketch out a few more insights found in Elias' work with regards to calendars and clocks, and to the fetishism and reification of time.

Timing synthesis: clocks and calendars.

Elias expresses further his argument pertaining to the inseparability of nature and society in the study of time through his discussion of the social institution of calendar

time.⁴⁵ In Elias' view, 'Calendar time illustrates in a simple way how the individual is embedded in a world in which there are many other people, a social world, and many other natural processes, a natural universe' (1992, p. 28). With calendar time, the age of an individual, the age of a society and the age of the universe, are all defined in relation to the solar year, an event-sequence that has socially acquired the status of a standard of measure. This is an example of what Elias means by a 'socially learned synthesis', and 'time' is a symbol of such a process.

Elias' insights on calendar time help us grasp further ways in which society mediates 'natural time'. Indeed, the fact that the solar year is used as a time-unit does not mean that time is a purely natural phenomenon: it rather means that the solar year has acquired the social status of a standard of measure of time.⁴⁶ Calendar time has been subject to numerous reforms and changes not because humans can't seem to be able to measure natural time accurately, but rather because nature is not precise enough for measuring human social needs. The common, purely practical view, holds that calendars are good or bad according to their approximation of the 'real' solar year. According to the present discussion, however, one might argue that calendars are 'good' if they meet social and political needs put forward by social time relations. It has only been a few hundred years since the calendar year is actually a decent approximation of the solar year. Calendars have been thought to have to conform to the solar year, but in fact, sun and moon cycles, years and months, have hardly ever been synchronized in calendar time. Many societies in world history have functioned without calendars replicating the solar year.

Furthermore, in the course of the development of timing practices, humans have found that they could have more precise sequences than natural phenomena such as tides or solar revolutions, in order to meet social requirements of activity orientation. For Elias, the clock is such a human-made device which produces more precise sequences, 'they

⁴⁵ The term calendar goes back to the latin word *calendare*, which means to call out, to announce, and is reminiscent of the timing function of officials and priests in ancient societies that would go about in the streets announcing that a new moon had arrived and thus a new month had started (Elias, 1992, p. 193).

⁴⁶ As Rifkin puts it, 'Every great civilization projects its own time values out onto the universe' (Rifkin, 1987, p. 14).

[clocks] are nothing other than human-made physical continua of change which, in certain societies, are standardized as a framework of reference and a measure for other social or physical continua of changes' (1992, p. 46). Whereas clocks are usually thought of as measuring 'natural' sequences, 'seconds' and 'hours' are rather socially standardized abstract time-units which are used to measure physical or other sequences. In the study of calendar and clocks, one finds once more that the 'physical' concept of time branches off from social timing practices, 'Clocks (and time-meters generally), human made or not, are simply mechanical movements of a specific type, employed by people for their own ends' (Elias, 1992, p. 118). Their function of measurement comes from the fact that their sequential movement is characterized by equidistant intervals between each point of their sequences, and it is this characteristic, socialized as a 'second', an 'hour' and so on, which allows them to serve as comparison sequences for other sequences' successive happenings in terms of their duration. The branching off of a physical concept of time is a corollary of when people started to produce and use self-made devices such as these (Elias, 1992, pp. 118-9).

In such a conceptual architecture, what can be said of Walter Benjamin's distinction between calendars and clocks? For the German thinker, although calendars and clocks are both forms taken by the social reckoning of time, the calendar has a fundamental qualitative relationship to historical consciousness which clocks do not possess. Pointing to the French Revolutionaries' design and implementation of a radically new calendar as the emergence in history of a new form of consciousness, Benjamin depicts calendars as 'monuments of a historical consciousness' (Benjamin, 2000c, p. 440). Accordingly for Benjamin, calendars are not a form of social time reckoning that can be put in the same category as clocks. However, as will become clearer throughout this study, I do not treat calendars and clocks as necessarily separated social institutions. I see calendars and clocks as historical products of social time as a 'struggling entity': both clock-time and calendar time take on specific forms in different social time relations, and are expressions and representations of time and history socially constituted through social struggles, and which evolution is marked by processes of socio-temporal struggles within

- and between - societies. For example, as I will argue in chapter III, the Gregorian calendar and clock-time come together in capitalist social time relations to produce specific forms of historical consciousness in a hegemonic time-form. Historical consciousness might not be an aspect of social temporality exclusively expressed in calendars, since it is possible – in capitalist social time relations as I will argue - for both clocks and calendars to come together in the expression of specific forms of historical consciousness, and as such clocks do participate in the formation of historical consciousness in capitalist social time relations. For example, the very idea of the ‘end of history’ in its modern form is predicated on the existence of empty clock-time’s abstract time-units which can be repeated indefinitely.

*

This discussion, which was triggered by Elias’ point on socially standardized sequences of change, also helps to clarify the issue of ‘time-units’. How different societies put together different sequences of change in a socially constructed time-consciousness helps one reach the point where time-units can be conceived as *socially constructed units* which will come to find fluctuating and approximate bases of measurement in ‘nature’. While some units employed in social time-reckoning and measurement seem to be quite directly ‘natural’ phenomena (a day is the time needed for the earth to revolve around its axis, while a year is the time the earth takes to accomplish a full circle around the sun), one can nonetheless recognize the *social* predicaments of such time-units in the sense that neither days nor years are expressions of a direct and unmediated relationship between humans and nature, but are rather products of social standardization. For example, if a day is defined by the rotation of planet Earth, there arises a problem of definition which can only be resolved through social convention. Indeed, a solar day would be the time that the earth takes to accomplish a full rotation relative to the sun. A sidereal day, then, would be the time taken by the earth to accomplish a full rotation relative to the distant stars. As a matter of fact, these two are not equal: for Earth, the sidereal day is shorter (by about 3min 56sec) than the solar day. In fact, the Earth spins 366 times about its axis during a 365-day year. Moreover, there

are irregularities in the steadiness of Earth's motion. In the contemporary time system, what is socially defined as a 'civil day' is basically an average of meridian day and solar day, and further varies from one time-zone to the other. In this sense, the day and the year as socially valid time-units are not 'pure' natural phenomena, but rather the product of a social standardization which involve a crucial level of social mediation between humans and nature.

Let me further take the example of the time-unit 'second'. While the 'second' started out its historical career as a fraction of other time-units ($1/60$ of a minute, $1/3600$ of a hour, etc.), it has now become the standard upon which other time-units are based. Two things need to be said about this. First, it is quite telling that the standard unit of time has historically moved from 'longer' to 'shorter' units. Whereas the day and the hour have occupied this role in different social forms, the second is now, in modern capitalist societies, the time-unit of reference. On the one hand, one might point to the 'acceleration of social processes' as a thinker such as Hassan (2009) does, in order to make sense of this development, although, on the other hand, some accounts present this fact as a result of some specialization process occurring in various 'communities of practices', astronomers, physicists or seafarers for example, 'needing' more precise time-units in their practical activities (Glennie & Thrift, 2009). Ultimately, I will argue below, such a refinement in precision can also be related to social processes of capitalist development. Secondly, the definition of the second itself has moved from being a mere fraction of longer time-units, to becoming defined as the oscillation rhythm of atoms. Indeed, before 1967, the second was defined as $1/86,400$ of the mean solar day. Since the day itself varies in length, that definition came to be seen as flawed, and the definition of the second came to be associated with the more 'precise' subatomic realm, of which the study developed significantly in the last two centuries. Accordingly, the second is now officially equal to 9,192,631,770 vibrations of a particular isotope of cesium (Falk, 2008, p. 75). In any case, whether one grounds the social need for more 'precision' in time measurement in the 'acceleration of social processes', in the needs of 'communities of practices', or in processes of capitalist development, the point to keep in mind here is that

the growing 'precision' requirements of social time thus mediate how, why, and for what reasons humans relate to 'natural' cycles, which cycles become socially relevant and which 'natural' basis is used to anchor 'social' cycles with 'natural' phenomena. As the social forms of organization and reckoning of time change, so does the 'natural basis' upon which social validation rests.

Yet, in spite of that, 'time' is often conceived as a natural phenomenon, a thing that stands unchanged and unmoved beyond the observable sequences that human use to measure 'it'. Following this line of thought, Elias observes that time is a reified concept. Let me wrap up my discussion of Elias' contribution by identifying what he posits as sources of this reification of time, and his understanding of time's 'reification'.

Fetishism and reification

First, according to Elias, the reification of time finds its source in its very characteristics as a *concept*. The fact that the concept of time represents an intellectual synthesis, a connection of events, of sequences of change, at a high level of abstraction, makes it that one tends to 'attribute to "time" itself the properties of the processes whose changing aspects this concept symbolically represents' (Elias, 1992, p. 121). In other words, the very fact that time emerges from what is common to different sequences might be responsible for the 'independence' to which it is subjected,

The common feature of this multiplicity of specific sequences of events that people seek to measure by means of clocks, or calendars, is called time. But because the concept of time can refer to when-aspects of very different sequences, it is apt to appear to people as if "time" is something existing independently of any social standardization of relational sequences and of any relation to specific sequences of events (1992, p. 104).

Elias refers to this as the 'fetish' character of time. He points out that it is even more pronounced in developed and complex societies, 'this fetish character of what we call "time" is particularly reinforced in people's perception because the social standardization of individuals in terms of socially institutionalized time is anchored more firmly and deeply in their consciences the more complex and differentiated societies become' (1992, p. 104).

The second component of Elias' analysis of the reification of time is found in his contention that Western linguistic traditions have reified 'time' as an object, by making it a substantive rather than verbal form 'it has transformed an activity into a kind of object' (1992, p. 43). He goes on to say, 'The verbal form "to time" makes it more immediately understandable that the reifying character of the substantival form, "time", disguises the instrumental character of the activity of timing' (1992, p. 43). The linguistic habits described here reinforce the myth of time as something that exists independently, that can be measured, even though it can't be perceived by the senses as an object, 'As is often the case in our type of socio-symbolic universe, highly abstract symbols become reified in common parlance and assume a life of their own. Time-concepts in general (...) are particularly prone to this hypostatic use' (Elias, 1992, p. 69).

Moreover, as discussed above, with the production of clocks, ironically, time appears to run its course independently of any human beholder, 'seconds', 'hours' and so on now appear as symbols of instances in the flux of incorporeal time, obscuring the fact that both time-units and clocks are human-made symbols and devices. The symbol of time has been cut out from observable data. It assumes a (reified) life of its own, in part since timing devices appear as self-moving, and in part because "time", in common with a whole set of other social institutions, is relatively independent of any particular human being, though not of human beings in their capacities as societies or humankind' (Elias, 1992, p. 121).

In our age, continues Elias, time is the symbol of an inescapable and all-embracing compulsion. The reification of time is more acute in large and complex societies, because social requirements of coordination and synchronization are more important. In modern industrial societies, the sense of time is so deeply rooted in people that they find it hard to see it as a result of social experiences. The individual has to attune his or her own conduct to the established 'time', thus making time an objective fact of life.

For Elias, the acute sense of time characteristic of modern societies is reflected in philosophy's and physics' enquiry about time. Theorists either posit time as an object in

the world, or as a property of subjects. Physicists accept at face value the concept of time that they have inherited from a long chain of social developmental processes as if it were the only concept of time, but they do not ask why the concept of time possesses its present form, nor why it has attained such ascendancy. The enquiry of time would fare better if it asked why time has become such an object in the first place. Philosophers, for their parts, have made time a part of human consciousness, a part of the human power to reason. They have not examined how time is a learned concept, and how it is socially constructed. For Elias, thinkers in both groups have tended to look for an immutable order beyond all change, for something, 'time', which was a universal stationary eternal feature of consciousness, or object of nature.⁴⁷ The net result is that thinkers tend to treat time as a universal concept, and fail to see that the human activity of timing has had several different forms (Elias, 1992, p. 127). Thinkers have thus forgotten the past,

Members of societies who as *beati possedentes*, benefit from a rich knowledge heritage including many conceptual representatives of a high-level synthesis, have for many centuries tried in vain to solve what was for them the enigma of that possession. Already in antiquity men like Augustine wondered about time. Kant more than a thousand years later found many admirers for the hypothesis that time and space were representatives of an intellectual synthesis a priori which meant, in dry words, that this form of synthesis was part of human nature or inborn. It was, as one may see, a classical case of forgetting the past, of disregarding the whole knowledge process leading up to one's own stage, one's own level of synthesis (Elias, 1992, p. 176).

One might conclude, then, with Elias, that studies of time might gain from more historical analysis.

On the one hand, whereas Elias seems to ask the right questions, and to identify the right problems, he misses the mark as to identifying the causes of these problems. This is due in great part to the fact that although he identifies the social terrain as the ultimate source of 'time', he does not see the relation between time and the social organization of material and human (re)productive activities in a clear-cut fashion. To

⁴⁷ For Elias, even though Einstein pointed rightly at the fact that time was a relationship and not, as Newton had argued, an objective flow, he did not go far enough in this insight. He did not escape what Elias calls 'word-fetishism' and kept a reified concept of time by arguing that under certain circumstances time could expand or contract. However, it might be pointed out that Einstein's ideas imply that time as a *dimension of space-time* can expand and contract, this property is not restricted to time as such.

take Elias' problems further, and to give a different set of answers to the questions that he rightfully raises, one needs to consider the issue of the reproduction of social power in societies. Indeed, the development of differentiated conceptions and practices of time can be related to social time relations and their corollary differentiation of social functions with respect to social time. One can also enquire about the relationship between the reification of time and capitalist social time relations. Indeed, my contention throughout this dissertation is that in order to offer an analysis of time in contemporary societies, one needs to look at the development of capitalism as a social system, and to analyze how capitalist societies are oriented with respect to time. What follows in this study will thus expand on Elias' line of thought in order to shed a different light on some of his claims, as well as taking into account the consequences that the development of capitalism has had on the social history of time. As such, in the next chapter, I will retrace the history both of clock-time and of capitalism and assess their relationship. In chapter III, I will examine the core logic of capitalism with a special eye on the issue of time and temporality which will lead to the development of a multi-layered understanding of capitalist social time relations. While doing so, I will thus assess Elias' claim that time is reified from a historical materialist perspective. In short, what Elias presents as a result of linguistic habits and conceptual vicissitudes, I will show to be rooted in capitalist social value formation, i.e. socially objective processes of human reproduction in a capitalist context. Building on Elias' crucial insights and pushing them forward, I will present a conception of social time as a 'struggling entity' in which different orders of time and temporality come together and are shaped by social relations of power.

Barbara Adam and the concept of 'timescape'.

In order to bring forward an understanding of the hierarchy of time-forms present in any given social time relations, I turn now to another fundamental contribution to the study of social time: the work of social theorist Barbara Adam (1995, 1998, 2004). Throughout various books and articles, Adam's influential conceptualization of social time has rapidly become a standard in social studies of time, both for its originality and its

scope. Although I will engage critically with some aspects of Adam's work, she will remain an essential inspiration for what follows.

A first point worth noting about Adam's work, is that she wishes not only to ground time in the social, but also to assess the fundamental temporal character of social and cultural development. Indeed, Adam's work seeks to grasp the essential role played by time and temporality in the development of human culture itself. For her, the finitude of human existence and the human awareness of it, itself a temporal relationship between humans and the world, has led to human cultural development which is in itself an expression of this fundamental temporal relationship. The question of time, understood socially, thus leads us to appreciate the fundamental role played by the human desire to transcend the earthly condition of finitude of human existence in the development of culture. In her own words,

I therefore want to argue that the development of human culture, that is, the form of life and practices embodied in traditions, institutions and artefacts, is inextricably tied to the relationship to time. It is bound to approaches to finitude, transience and decay, and to the human quest for transcendence of the earthly condition (2004, p. 72).

Here again, society and nature, or 'earthly conditions' of birth, life, death and decay, need not be dichotomized, but should be understood as both taking part in the reality of social time.

The second point I want to note about Adam's work and which is of direct relevance to the present study concerns her concept of 'timescape', which aims at grasping the fundamental multiplicity of temporalities in which humans dwell inside the social field. Social time, for Adam, is not to be understood in narrow terms: although her work seems to position subjective experiences of time at center stage, her concept of timescape does help us to understand the temporalities of the social field as made up of different biological, psychological, natural and social temporalities complexly threaded together in our experience. Hassan efficiently summarizes Adam's conception,

Adam's idea of timescapes may be seen as the intricate intersecting of the rhythms, beats, sequences, beginnings and ends, growth and decay, birth and death, night and day, seasonality, memory and so on that constitute the diversity of embedded temporalities that are part of everything: from the eons it takes for a rock to turn to sand, the birth and death

of a civilisation, the life span of the fruit fly, to the lifetimes or minutes that permeates a memory or dream (Hassan, 2009, p. 46).

The concept of timescape is a crucial tool. Indeed, it refines our understanding of the different components of what is comprised in the concept of social time. For Adam, a timescape comprises the following: a) Time frames, which I will also call time-units, which are the measuring rods for duration such as seconds, days, years, lifetimes, eras and epochs; b) Temporalities, which points at time as change, and denotes process and impermanence; c) Tempos, which refer to the pace, the intensity, or the rate of an activity, process or practice; d) Timing, which for Elias meant the activity by human of measuring time, is, for Adam, understood more narrowly as the activity of synchronization; e) Time points; which refer to a moment, a 'now', an instant or a juncture; f) Time patterns, which highlight the rhythmicity, periodicity or cyclicity of a practice or process; g) Time sequences, which refer to series, to cause and effect relationships, or to simultaneities; h) time extensions, which refer to the duration itself, the continuity of a practice or process; i) and finally the triad of past, present and future, which points to temporal horizons, memory and anticipations (Adam, 2004, p. 144). I will borrow, when suitable and conducive to a better understanding of conceptual nuances, these conceptual definitions.

Alongside conceptual rigour, what is significant in the concept of timescape for my purpose here, is the space it allows for an understanding of the threading together of different time forms as a *hierarchized* process. This hierarchizing of time relations expresses and reproduces social relations of *power*. As Adam herself puts it, 'I propose that we think about temporal relations with reference to a cluster of temporal features, each implicated in all the others *but not necessarily of equal importance in each instance*. We might call this cluster a timescape' (2004, p. 143, my emphasis). Adam herself does not satisfactorily emphasize the *logic of power* which is at play in social timescapes and focuses instead on the *multiplicity* of times comprised in any timescape. What I mean is that although she recognizes the differentiated 'importance' of different times within a given timescape, the logic of power and social struggle involved in the timescape sometimes gets lost in her analysis which focuses more on 'multiplicity' than on

'struggle'. My own conceptual orientation, here, will highlight and emphasize the logic of power at work in any 'timescape'. As such, I will use the concept of *social time relations* to highlight the logic of social power entailed in any 'timescape', and to stress their proximity with social-property relations and social relations of power. While Adam works her concept of timescape as a layout of multiple social times, I will refer to social time relations more straightforwardly as 'struggling entities' in which different and often contradictory times, are organized according to a logic of power, and take contested politico-institutional forms in social time regimes.

Robert Hassan has worked on this aspect of the timescape as a 'hierarchy of temporal rhythms', made up of 'dominant timescapes and subsidiary temporalities' (2009, p. 49). Such a stance has enabled him to posit the historical development and impositions of two successive 'empires of speed', the first predicated on clock-time, and the second on what he has termed 'network time' (2009). In the same line of thought, my account of the relationship between capitalism and clock-time, which follows in chapter II and III, aims at conceptualizing the historical and theoretical relationship between capitalism and clock-time, not in the aim of postulating that the totalization and universalization of clock-time in capitalist societies makes any discussion of 'multiple times' flawed, but on the contrary, in the aim of recognizing that this process has been, and still is, rooted in social struggles and as such is uneven and contested. I will argue that the social time relations in capitalist societies are dominated by clock-time: capitalist clock-time occupies a *hegemonic* position in the hierarchy of temporalities that form capitalist social time relations, subordinating, colonizing, subsuming and/or marginalizing other temporal features, practices, and concrete temporalities. Moreover, what my study wishes to provide is an *explanation* of these relationships and not just a mere description. I argue that capitalist social time relations are dominated by abstract clock-time *because* of the intimate relationship between clock-time and processes of capitalist value formation.

So while Elias, whose shortcomings will be made apparent as this study proceeds further, does show that time must be studied as a social phenomenon, Adam contributes in a fundamental way to time studies with her concept of timescape, of which, following

Hassan, I will emphasize the hierarchical aspect and the embedment in social relations of power through the concept of social time relations. This will lead me to socio-historically specific concepts of social time comprising multiple times and temporalities hierarchically ordered. I will propose that social time is a struggling entity and that capitalist time can be conceived along those conceptual lines.

As I have maintained above, the crux of my methodology resides in the mutual reinforcement of historical contextualization and theoretical endeavour. Before assessing the relationship between capitalism and clock-time in chapter III, I need to clear historical and theoretical ground as to the historical emergence of clock-time on the one hand, and capitalism on the other. Chapter II will undertake this task.

Chapter II: The Origins of Clock-time, and the Transition to Capitalism

- A) The 'innovation' of the clock: clock-time, wage-labour and commerce in context.
- B) Clock-time and pre-capitalist social time relations.
- C) The transition from feudalism to capitalism.
- D) The temporal infrastructure.
- E) Newton's time.
- F) Chapter conclusion.

This chapter focuses mainly on the history of the mechanical clock and its correlative time-form of clock-time. I want to retrace its historical path from a time-form socially embedded in specific pre-capitalist social time relations, to its slow but unmistakable development into a social temporal infrastructure in a period of transition to market mediated social-property relations. I want to assess clock-time's position in pre-capitalist social time relations, and then assess its relative spread, up until just prior to the Industrial Revolution. I will therefore enquire into the historical birth of mechanical clocks, and their social embedment in pre-capitalist social relations, especially in urban settings. I will then move on to an account of the transition from feudalism to capitalism. This will lead me to a historical moment when clock-time's temporal infrastructure is slowly being built in some parts of Western Europe – I will focus on England - while agrarian capitalist social relations are developing in England. This context underpins Isaac Newton's formulation of an extremely important and influential concept of 'absolute time', which I will aim at relating to this socio-historical context. In what follows, my main proposition is that clock-time, although it does acquire more and more presence in pre-capitalist social time relations, and slowly deploys itself as a socio-temporal infrastructure in certain social microcosms, cannot be said to have reached a *hegemonic* position in pre-capitalist European social time relations.

A) The 'innovation' of the clock: clock-time, wage-labour and commerce in context.

The – contested – imposition of conceptions and practices of time by religious authorities, ruling groups, states, or by dominant classes, figures prominently in the literature on social time, even if it is often described in softer terms, as ‘rationalization’ of time, or ‘organization’ of time (for example see Zerubavel, 1981, among others). If one of the most widely spread of such time-forms, the calendar, dates back to ancient civilizations, mechanical clock time is a relatively new phenomenon (13th-14th centuries), and ‘World Standard Time’ as we know it is even more recent (19th century).

The innovation of the mechanical clock and its corresponding form of time: ‘clock-time’, marks one important development in the history of social time. Many scholars treat the invention and spread of clocks in the late medieval period not only as part of the wider process of the transition to ‘modernity’, but as the very ‘symbol of the process of European modernization’ (Dohrn-van Rossum, 1996, p. 3). But this process was (1) far from driven by purely technical ‘discoveries’, and (2) did *not* represent a once-and-for-all shift from the concrete time-units, temporalities, timing practices, time patterns and time sequences of human practices to abstract ones, quantified and measured by abstract time-units. The ‘revolution of the clock’ of the 14th century was perhaps not as ‘revolutionary’ as it might appear at first glance. My contention is that it is only after the *consolidation* of capitalism that the process of universalization of clock-time will truly unfold, that clock-time will embark on its path to social hegemony. Let me focus here on the first act of this historical process, the introduction and diffusion of clocks and clock-time in Late Medieval and Renaissance Europe, as a part of social-property relations and social time relations that were not capitalist.

1) On the face of it, the introduction of the clock might seem like a development to be treated as part of the history of techniques and technology, which in turn would have had monumental effects on society. If one were to adopt such a perspective, ‘modern’ time would be viewed as a product of the invention of the clock, leading to the replacement of ‘imprecise’ medieval time-reckoning systems with ‘precise’ clock-time, a development fuelled in return by the refinement of clock mechanisms. The history of technique and technology would then underpin social history and the development of

clocks would in itself be the causal factor explaining the advent of 'modern time', and thus a crucial explanatory variable in accounts of the advent of 'modernity' itself. However, treating the invention of clocks as an endogenous technological development would amount to isolating the development of technology from its social context. Such treatment would be subject to the pitfalls of *technological determinism*, and move back to a mechanistic explanatory strategy for social development. As noted in chapter I, scholars have shown that explaining social change by technological change leaves the explanation wanting.⁴⁸ In the case of mechanical clocks and clock-time, historian Jacques Le Goff pursues an insight developed by French social historian Marc Bloch, and reminds us that 'l'histoire des techniques est impuissante à expliquer à elle seule le passage du temps médiéval au temps moderne' (Le Goff, 1997, p. 67).⁴⁹ Dohrn-van Rossum, on his part, writes that 'the introduction of public clocks was not only a technological but also a social innovation' (1996, p. 126). Similarly, in his study on time and labour to which I will come back in chapter III, Moishe Postone remarks that

the emergence of abstract time cannot be accounted for solely with reference to a technical development such as the invention of the mechanical clock. Rather, the appearance of the mechanical clock itself must be understood with reference to a sociocultural process that it, in turn, strongly reinforced (Postone, 1993, p. 203).

In this sense, along the lines of the distinction drawn by Dohrn-van Rossum (1996, p. 125), I do not wish to address so much the question of the *invention* of the clock, but rather the question of the *innovation* of clocks and clock-time.⁵⁰ Moreover, I will focus my attention on the *social embedment* of this process of innovation.

The critique of technological determinism highlights the fact that technology does not develop on its own. Indeed, for one thing, the historical rhythm of technological innovation and development is not a straight and continuous line; its continuities and

⁴⁸ For a critique of technological determinism in social theory see E. Wood (1995, pp. 108-145).

⁴⁹ 'The history of technique does not have the explanatory power, on its own, to account for the passage from medieval time to modern time' (free translation). Marc Bloch had called for further studies of the relationship between technical development and 'social needs' (discussed in Dohrn-van Rossum, 1996, p. 12).

⁵⁰ 'In contrast to invention, innovation describes, on the one hand the datable process of the introduction of something new at a certain place, and, on the other hand, the totality of such events and processes (Dohrn-van Rossum, 1996, p. 125).

discontinuities, jumps and lags, movements forward and back, cannot be endogenously explained without recourse to social and historical explanatory variables: in other words, the history of technology cannot be properly told without turning to social and historical explanatory variables in order to explain its progresses and vicissitudes. Social and historical conditions fuel, prevent, accelerate or dispatch technological innovations, and are thus fundamental variables to take into consideration in any study of technological innovation. Different settings of social-property relations, as I will discuss more in depth below, have differentiated effects on technological 'development' or 'progress'. Here, instead of treating technology as the motor of socio-historical change, I treat socio-historical conditions as the context in which to assess the historical meaning of technological innovation.

Accordingly, I treat here the innovation of clocks and clock-time as a socio-historical phenomenon. Socio-historical contextualization, as I have discussed in chapter I, does not reduce human agency and creativity to mere reflections of material conditions. This is a false problem. In the present case, there is in fact no contradiction in emphasizing the astonishing character of the technical improvements in the history of time-measurement and clock-making and the amount of human creative genius necessary to the movement of such a process on the one hand, and the social motives and interests, the socio-historical logic and context of such a development on the other. Although technological improvement and discoveries occur in socio-historically specific contexts shaped by social conflict, social-property relations and their corresponding sets of 'rules of reproduction', one can appreciate and underline the creativity and genius deployed by human mental and manual skills in these processes.

2) I want here to put the process of innovation and spread of clocks in the larger context of feudal social-property relations and social time relations. As I will argue, although one should not underestimate the impact of clock-time in feudal societies, there is a *qualitative* gap that separates European pre-capitalist clock-time from capitalist clock-time, i.e. a qualitative difference in how clock-time is embedded in feudal and capitalist social time relations. This gap does not so much reside in a fundamental shift in

techniques or philosophies of time, although they are parts of this process, as I will discuss below. The gap has to do with the level of penetration and colonization of social life as a whole by clock-time on the one hand, and the unification and universalization of a clock-time framework *across space* on the other. It is only with the consolidation of industrial capitalism that abstract clock-time comes to occupy a *hegemonic position* in social time relations. As will become clear throughout what follows, I thus treat here the social hegemony of clock-time as something different from its diffusion in some specialized social fields or more or less isolated social practices in pre-capitalist contexts, as well as from its relative homogenization of *local* time-signalling. For instance, one needs to be careful not to equate the public (urban) character of European feudal clock-time with social hegemony on the one hand, and the more privately internalized character of modern clock-time with a demotion of its social importance on the other. As this study will point out, things rather work the other way around. Let me revisit the broad lines of that history.

*

There is a historiographical controversy concerning the invention of the mechanical clock (see Landes, 1983, pp. 15-82; Dohrn-van Rossum, 1996, p. 46 and following). Historians do not agree on exactly when and where the first mechanical clocks were made and this has to do mainly with the absence of this information from historical data. However, a broad consensus exists as to its Western European origins and historical records suggest that the first devices were built around, or slightly before, the year 1300.⁵¹ All throughout the 14th century in Europe, large mechanical clocks are installed on churches and in city and town buildings in regions now known as England, Germany, France, and Italy. Before this period, mechanical clocks and their correlated time-form of clock-time do not make any historical appearance in pre-medieval Europe or in the ancient world: its correlative form of time, 'abstract time', as Postone points out, 'is historically unique' (1993, p. 202). As an independent variable with phenomena as its function, abstract time, with its 'division of time into commensurable and interchangeable

⁵¹ Rawlings (1993) says 1270 (quoted in Glennie & Thrift, 2009, p. 29). Jacques Le Goff (1977) and David Landes (1983) say around 1300. Dan Falk (2008) says the last decades of the 13th century.

segments would have been alien to the world of Antiquity and the early Middle Ages' (Postone, 1993, p. 202). Let me discuss a few points with regards to this historical process.

First, the thesis that mechanical clocks were invented in Europe is somewhat counter-intuitive. Medieval Europe was far from being the technical and scientific leader in the world at that time. Chinese and Islamic civilizations were technically and scientifically more advanced. An example which is often given is the magnificent *clockwork astraria* built by Su Sung as early as 1094 (Landes, 1983, pp. 17-19; Adam, 2004, p. 113; Dohrn-van Rossum, 1996, pp. 84-89), although one could point to the ancient Greek Antikythera mechanism, although from a much earlier period, as a counter-example. However, as Landes points out in the case of China but which is also true of Ancient Greece, such accomplishments did not lead to the endogenous development of mechanical clocks, nor to time-keeping practices predicated on abstract clock-time (Landes, 1983, pp. 17-52). Moreover, the conception of time as an independent variable developed only in Europe (Needham, 1981, p. 108; Postone, 1993, p. 202).

While European mechanical clocks and Chinese time-keeping devices both used gravity to propel their respective mechanisms, Chinese devices mainly consisted of water-clocks, sand-clocks and sundials, and what a modern outlook would consider the 'shortcomings' and 'inefficiencies' of such methods were not overcome. To mention only one example of these 'limitations', clepsydras, such as the ones built in Su Sung's forty feet high marvel, were sensitive to temperature variation, not to mention the impossibility of using water-driven clocks in freezing temperatures. Moreover, water pressure would not remain even throughout the mechanism, creating lags and 'imprecision' from the perspective – a-historical in this case - of equal and constant time-units. Contrastingly, in Europe, starting in the 14th century, the mechanical clock 'used a falling weight to exert a continuous and even force on the train, which the escapement alternately held back and released at a rhythm constrained by the controller' (Landes, 1983, p. 21; see also Glennie & Thrift 2009, p. 30; Dohrn-van Rossum, 1996, pp. 45-123). Such a mechanism was not only 'freer' from weather fluctuations and problems of water pressure than other

mechanisms such as clepsydras: it also had a tremendous potential for perfectibility.⁵² Indeed, the mechanical clocks had a potential for miniaturization, portability and more precision, whereas other forms of clock such as water-clocks, sundials or sand-clocks could only be technically improved in a limited way (Landes, 1983; Adam, 2004, p. 113).⁵³ It is only with the Portuguese Jesuit missions of the 16th and 17th century that mechanical clocks and watches were introduced in China (Landes, 1983, pp. 37 and following; Dohrn-van Rossum, 1996, p. 84).⁵⁴ In Europe, mechanical clocks introduced a form of time-reckoning in terms of the empty, homogenous and constant abstract time-units of clock-time. Their social embedment remained at first located in precise and specific social microcosms in pre-capitalist European societies.⁵⁵

As Landes has pointed out, much of the historiographical controversy around the invention of the clock revolves around the definition of the mechanical clock one is actually using. He identifies the 'heart of the clock', what makes a clock truly a clock, not so much as the mechanism of 'escapement' but rather the use of oscillatory motion to divide 'time' into countable beats (1983, p. 11). While technical questions have obviously their historiographical importance, what is of interest to me here is the *social* aspect of the phenomenon. As such, whether one describes Su Sung's celestial machine as a clock, or gives credence to the speculations that Gerbert had invented the clock by the year 1000, or enquires into the – truly fascinating – marvels of the Greek Antikythera mechanism (about 1200 years before Su Sung's work), or adopts the more traditional point of view which states that the machines built by Richard Stoke, Richard of Wallingford and

⁵² Although it would take some 300 years before the work on the pendulum of Dutch mathematician Christian Huygens made the technology 'accurate' according to our modern standard.

⁵³ On ancient forms of sundials and water clocks and some of their social usages, especially in the Greek and Roman worlds, see Dohrn-van Rossum (1996, pp. 20-28). For an overview of medieval time-keeping devices from water-clocks to the astrolabe, see Dohrn-van Rossum (1996, pp. 64-96).

⁵⁴ 'The mechanical clock escapement was in all likelihood an independent European development, since neither in China nor in the Islamic sphere can we observe a comparable development toward a more elaborate bell technology' (Dohrn-van Rossum, 1996, p. 105).

⁵⁵ It is important to note, with regards to mechanical clocks, that before the 16th century, they were not merely or solely, time-keeping devices, but included various forms of religious cosmological references. Here I focus more on the time-keeping function for the purpose of the subject matter of my enquiry.

Giovanni de Dondi were among the first mechanical clocks,⁵⁶ the issue at stake here remains the same: it is in Late Medieval and Renaissance Europe that mechanical clocks first acquire a – at first very limited – social function.

As many have pointed out, in China, ‘telling time’ was a prerogative of the Emperor’s court, a matter of political prestige more than a matter of temporally organizing daily socio-economic relations and activities (Landes 1983; see also Postone 1993, p. 205). In terms of the social usage of time-keeping devices in China, the ‘discrepancies’ and ‘lacks in precision’ of such devices could be hidden by political means, and as such did not appear as ‘lacks’ or ‘imprecisions’ on their own terms,

Given the calendrical-astrological objectives of these clockwork astraria, an accurate rate was desirable but not necessary. For horoscopes, the tolerable margin of error is relatively large. What does it matter if the timing of the winter solstice is off by an hour, several hours, or even a day? A great deal in principle; indeed, the very legitimacy of the emperor rested on the harmony of his decisions and actions with the patterns of the cosmos. In practice, though, there was room for error, so long as it was not patent. If the astronomer found an anomaly, the armillary sphere could be adjusted and the calendar corrected. The important thing was the appearance of knowledge, duly certified to the ruler by the court astronomers and proclaimed by him to the people. The criterion, in other words, was political rather than scientific’ (Landes, 1983, p. 32).

Chinese time-telling devices were not ‘imprecise’: they perfectly fitted their purpose in the socio-political context in which they were embedded.

*

While historians might debate over the issue of the *invention* of the mechanical clock, here I frame the question in terms of the social context in which such an *innovation* is embedded. I ask to which social interests and needs such an embedment is related,⁵⁷ how it helped reproduce certain groups’ power or position, and inside what form of social time relations it came to be a part. In this sense, the extent of the technical merits of the invention might be astounding – and in this case they are – but what is relevant for my

⁵⁶ For more details on these ‘legendary inventors’, see Dohrn-van Rossum (1996, pp. 54-55), and chapter 2 in Landes (1983). Landes also argues that by the time we get to Dondi and Wallingford’s tower clocks, the mechanical clock is already at its third or fourth generation.

⁵⁷ In the European context, ‘the clock did not create an interest in time measurement; the interest in time measurement led to the invention of the clock’ (Landes, 1983, p. 58).

purpose is the inscription of the new technology in social and historical processes. The issue at stake here is thus the social embedment of this technical innovation.

Framing the problem in such a way leads one to examine under what conditions time-reckoning in terms of abstract measurement could have had social significance - in this sense, it might be that the development of *striking mechanisms* are even more relevant than the escapement itself, since it is only after the development of hour striking works that the diffusion of public clocks truly began.⁵⁸

Following this line of thought, one finds that the social conflicts and social-property relations of Late Medieval and Renaissance Europe *did* create a social interest in time-measurement. It is also in this context that clock striking mechanisms acquired a social meaning which is possible to differentiate from other acoustic signals in medieval urban contexts. The need for *precision* in time-measurement was socially manifested maybe not solely on 'scientific' grounds as Landes would have it, but on the grounds of more practical socio-historical relationships and social-property relations.

In pre-capitalist Europe, prevailing social-property relations led to rules of reproduction for certain factions of the appropriating classes which triggered a social interest in certain forms of time-measurement. In his highly influential account, French historian Jacques Le Goff has identified the social interest in time-measurement in Renaissance Europe as manifested through practices and activities of merchant classes, particularly in the Italian city-states, but also in other European urban centers. According to him, the social interest for more precise time-measurement stemmed from the merchant's daily socio-economic activities linked with the rise of commercial networks in Renaissance Europe, as well as from class strife over the conditions of wage-labouring practices in urban textile centers (Le Goff, 1977; see also Rifkin 1987, p. 102).

As one goes over these arguments, it is important to locate these wage-labouring practices occurring in medieval urban centers and more specifically in the cloth industry in the context of pre-capitalist social-property relations. Too often, wage-labour is treated as intrinsically capitalist, or as an embryonic form of capitalism waiting in the interstices

⁵⁸ On the development of the striking mechanisms, see Dohrn-van Rossum (1996, pp. 108-113, 126).

of feudal social relations to take hold of society. However, wage-labour is not necessarily capitalist, and one should not seek to explain the origin of capitalism by merely extrapolating from medieval wage-labouring practices in urban settings. Pre-capitalist and capitalist wage-labour differ *qualitatively*. As historian and social theorist George C. Comninel points out,

Every Western society has had markets, and every Western society has had wage-paying labour. Only capitalism has made every normal productive relationship an expression of "the market". And only in capitalism are wages not merely the normal means of acquiring subsistence, but a form of income wholly divorced from traditional and normative rules of payment, in principle being exclusively determined by "the market" through the "commodification of labour-power" (Comninel, 2000, p. 7).⁵⁹

This point about pre-capitalist wage-labour should be kept in mind, as I turn now to the question of how the innovation of the clock is embedded in pre-capitalist social-property relations in urban commercial centers. As wage-labour is not necessarily capitalist, commerce is also qualitatively different from capitalism, especially in the context of Late Medieval and Renaissance Europe. As Ellen Wood points out in the case of the social-property relations prevailing in Italian city-states such as Florence and Venice,

they were unambiguously non-capitalist in their mode of exploitation, depending on the coercive power of the city to appropriate surplus labour directly, not only for the purpose of maintaining civic revenues but also for the benefit of urban elites who owed their power and wealth to their civic status' (2003, p. 55).

Since these commercial classes relied on pre-capitalist modes of appropriation, they were therefore not capitalist classes in that context.

Keeping this in mind, I shall first examine the history of clocks and clock-time in relation to this setting of social-property relations. It will become clear that while these pre-capitalist social-property relations do produce a very manifest social interest in the development of clock-time, the latter remains in its pre-capitalist form and, according to the argument here presented, not socially hegemonic.

⁵⁹ Of course, the *generalization* of wage-labour as the dominant social form for subaltern reproduction does entail a capitalist mode of production. But, as will become more explicit below, wage-labour in the medieval context is very far from generalized.

*

Let me first consider the social phenomenon of the introduction of mechanical clocks in its relationship to *work bells*, which were used by medieval employers to discipline the urban wage-labouring work force, mostly in centers of textile production (Le Goff, 1977), but also in other settings as well (Dohrn-van Rossum, 1996, pp. 298-9). Indeed, as soon as the early 1300s, work bells are used in such settings, and this usage acts as a catalyst for social conflicts that revolve around pre-capitalist wage-labour relations.

The introduction of these work bells runs parallel to the crisis in the feudal agrarian economy, and also, by ricochet, the crisis of the textile industry in the early 14th century. The falling or stagnant productivity on the land and the concomitant decline in cash incomes by lords in the early decades of the fourteenth century meant that the demand for market goods – largely supported by lordly consumption, and thus dependant on lordly income – would fall, leading to a crucial tension in feudal manufacturing.⁶⁰ In the context of urban textile centers, as Le Goff points out, ‘Les patrons – les *donneurs d’ouvrage* – en effet, face à la crise, cherchent de leur côté à réglementer au plus près la journée de travail, à lutter contre les tricheries ouvrières en ce domaine. Alors se multiplient ces cloches de travail...’ (Le Goff, 1977, p. 69).⁶¹

Such work bells had a very precise function which can be related to the particular nature of the textile industry in this period. As Postone points out, the organization of work in this sector was different from other medieval ‘industries’, for example in how it was engaged in large-scale production for export, and how a strict separation between the cloth merchants and the workers was in effect, which entailed a – pre-capitalist – form of attention to the productivity of labour (Postone, 1993, pp. 209-10). Why was this form of attention to the productivity of labour a pre-capitalist form? Simply because, ultimately,

⁶⁰ As Hilton points out, the productivity *per capita* of the feudal economy in the late 13th century is stagnant or falling. Hilton goes on to explain this crisis of feudalism by looking at the very fundamental structure of lordship and its intrinsic limits for economic development. See Hilton (1985a).

⁶¹ ‘Bosses – those who provide work – indeed, faced with the crisis, seek to regulate the working day more precisely, to fight back against worker’s cheatings in the matter. This is when those work bells multiply’ (free translation).

while some level of productivity *per se* did matter, the social power of merchants and the commercial classes did not depend on it, but rather on their command over trade networks. As I will discuss in more details below, the market here was an *opportunity* rather than an *imperative*. Production did often indeed adapt to changing conditions and market opportunities, but 'productivity' as we know it, i.e. an imperative to regularly increase productivity, was not a condition for the social reproduction of these commercial classes. As Wood has it, 'Trade was conducted on non-capitalist principles, depending not on cost-effective production and enhanced labour-productivity in a market driven by price competition, but rather on extra-economic advantages, such as monopoly privileges...' (2003, p. 56).

Employers would ring the work bells to call the labourers at the start of the day, delimit the duration of meal-time, and signal the end of the work day.⁶² Wages being mostly calculated in terms of work-days,⁶³ employers and wage-labourers developed an interest in delimiting the appropriate boundaries for the paid day. In this context, employers introduced work bells as a tool to regulate and discipline labour more strictly in order to take advantage of market opportunities and to tighten up the control over the workforce in a context of economic stagnation. Important class tensions would result from the use of work bells all throughout the middle part of the 14th century, as these disciplining devices multiplied in urban centers (see also Dohrn-van Rossum, 1996, pp. 297 and following).

In France for example, the work bells of the early 14th century caused much strife, workers and employers fought over their use (Le Goff, 1977; Landes, 1983, p. 73). From 1324 onwards, there was a series of political moves from ruling classes to install work bells in French towns. In 1324 in Gand, a work bell was installed in the hospice. In Amiens in 1335, Phillip VI responded favourably to a request by the mayor to make the

⁶² As Glennie and Thrift point out, time-signalling remains aural; dials, and their visual time-signals, are not an integral part of mechanical clocks until the late 17th century and early 18th (Glennie & Thrift, 2009, p. 41). Accordingly, 'telling the time' does not comprise the same set of socially learned skills across the history of clocks and clock-time.

⁶³ Although other wage-labourers such as servants would often have their wages paid for in the form of a yearly contract (see for example Penn & Dyer, 1990, p. 357).

bell installed in the belfry the one to regulate the time of labour over and against other bells. Similar processes are found in Douai, St-Omer, Montreuil, Abbeville and Aire-sur-la-Lys. Le Goff points out how the bulk of these processes occurred in textile centers: the introduction of work bells occurred in intimate relation with the disciplining of the work force in pre-capitalist wage labour as it was performed in these textile centers.⁶⁴

Why focus so much on work bells when other bells are ringing in the medieval town? For example, town people will hear periodically the market bell, the grain bell, urban defense bells, curfew bells, oath bells, the mass and church bells, etc. (Le Goff, 1977, p. 73; Dohrn-van Rossum, 1996, pp. 197-215).⁶⁵ Town bells were used for social as well as for political reasons and the use of bells, in medieval towns, was strictly regulated and under the control of the ruling elite, 'the authorization to ring the city bells was therefore very strictly regulated in medieval cities, and unauthorized use was severely punished' (Dohrn-van Rossum, 1996, p. 198). Dohrn-van Rossum goes as far as to suggest that the control over bells was often the ultimate sign of political control, 'Symbolically, possession of or access to the municipal bells was a sign of *de facto* control' (1996, p. 198).

Work bells differ from other bells from the fact that their signal is actually detached from the other acoustic signals of urban medieval life. As Dohrn-van Rossum puts it, 'With the help of the so-called '*Werkglocken*' (work bells), the time of the day was actually and symbolically detached from the intra-urban temporal order and separated in terms of signalling technique' (1996, p. 297). Moreover, what is specific to work bells in contrast with other bells from the 'intra-urban temporal order' is the different formal properties conveyed by their aural time-signals. While diverse town bells convey an *evenemential* form of time-marking, i.e. the marking of episodic points and manifestations of events or danger, the work bell conveys a temporal form characterized by continuity, 'fullness', constant unfolding; it is the confinement of life inside a network of time-reference that is not so much dictated by discrete events, but by the *constant*

⁶⁴ Dohrn-van Rossum actually challenges the relevance of this focus on textile centers, and points to other wage-labouring settings as well, see (1996, pp. 298 and following).

⁶⁵ In its early stages, the work bells are sometimes town bells which are used to regulate work-time (Le Goff, 1977, p. 73).

unfolding of the time of labour *between* two signals, by the *passage* of constant time and the 'measurement' of the duration of labour.⁶⁶ As such, the work bells already prefigured to some extent the clock-time of mechanical clocks.

In this context, social conflict developed around the use of work bells. Labourers' anger was not so much directed at the work bells *per se*, but rather at the ones controlling them. In feudal wage-relations, the day constituted the fundamental measuring unit for the payment of the wage. Labourers were of course concerned as to whether the work bells, determining the duration of the work day, as well as the duration of breaks and meal-time, rang 'honest' time. Could they trust the employers' bells on that regard? Or could they trust municipal bells for that matter, given that the town councils were mostly formed by employers themselves or their class allies? In the period after the Black Death, the dearth of labour for hire gave the medieval wage-labourers an edge in obtaining better work conditions. The most common target of their demands was the silencing of the work bells. Not only did they succeed in some towns in that regard, but moreover, they sought to make use of the bells for their own sake, and change the social function of the device according to their own interests. For example, at Th rouanne in 1367, an edict promised the wage-labourers that the bells would be 'forever silenced', while at Commines in 1361, a fine of 60 pounds was established for whoever would use the work bells for other usages such as to call an assembly, or revolt (Le Goff, 1977, p. 71; Landes, 1983, p. 74). Broader social revolts against the city lords had indeed displayed the centrality of the control over the bells in medieval towns, 'revolts against the lords of the city were signalled with the ringing of these communal bells "1368 - a large, armed crowd arrived...and said they wanted to have...the seal of the city and the keys to the alarm bells (*sturm-glocken*) (Chronicles of Augsburg)"' (Dohrn-van Rossum, 1996, p. 199).

The proliferation of mechanical clocks in town squares and in urban settings was a way to resolve, or at least to attenuate such labour unrest around work bells (although the tuning of differing clocks to a 'true' clock reintroduced a further layer of intra-class political struggles in the equation, as in the example of Charles V's order to tune all of

⁶⁶ Postone makes a similar point, 'Temporality as a measure of activity is different from a temporality measured by events' (1993, p. 211).

Paris' bells to the Royal Palace's clock shows (Le Goff, 1977, p. 76)). Indeed, the clock created a 'neutral' time (Adam, 2004, p. 114), time as it 'objectively is' (in opposition to employer-controlled bells). In the context of urban and semi-urban wage-labouring practices, tuning the work bells to such mechanical clocks appeared to prevent the manipulation of the former; accordingly the wage labourers might have preferred them over 'arbitrary' bells. Even though they still worked in an imprecise fashion according to modern standards, they were more precise than any other device at the time in the European context.⁶⁷

In the same way that work bells were significantly detached from the 'intra-urban temporal order', the hour-striking of mechanical clocks could be said to be of a different nature than the cluster of medieval town bells that created something akin to an 'acoustic chaos' (Glennie & Thrift, 2009, p. 186). Whereas medieval bells conveyed 'practical' time-signals, clock-time's striking of the hour conveyed more 'abstract' time-signals, to use Glennie and Thrift's distinction (2009, pp. 37-8).⁶⁸ This has Rifkin noting that in comparison to the striking of the hour by the first clocks, 'Medieval time was', for its part, 'still sporadic, leisurely, unpredictable, and, above all, tied to experiences rather than abstract numbers' (1987, p. 101). Moreover, these devices' abstract form of time was manifested in the way in which they worked under cloudy or sunny skies, despite rain or snow, and despite temperature variation and freezing conditions, when sundials and clepsydras would sometimes not have been of much use. Socio-historically specific concepts and practices of 'neutrality'⁶⁹ and 'efficiency' thus seem to have formed a

⁶⁷ Islamic cultures' non-mechanical time-keeping was far more accurate than any European devices at the time (Adam, 2004, p. 113). See also Dohrn-van Rossum's discussion (1996, pp. 30-31). Perhaps this is related to the more predominant role played by commerce in these societies in comparison to Europe?

⁶⁸ One needs to be cautious with Glennie and Thrift's amalgamation of clock-time and bells, in which conceptual distinctions between clock-time and town bells are not made on the grounds that medieval bells implied an aural time-reckoning altogether. Although clock-time and bells were indeed conveying aural signals, I propose a conceptual distinction between episodic time signals and time-signals which convey a 'constant-unfolding' conception of temporality. I think they would see work bells as just another form of 'practical signal'. (See Glennie & Thrift, 2009, p.82 and following, 136-8, 144, 183).

⁶⁹ Neutrality, while apparent in this specific context, is not a 'trans-contextual' feature of clock-time. Consider this scholar's point, speaking of iron manufacturing around 1700, '...the correct measurement of the duration of the working day, that is, the definition of time itself, was the prerogative of the employer whose (factory) clock determined the one true time of labour. Thus Crowley's [Iron Works] Law Book stated: "it is therefore ordered that no person upon the account doth reckon by any other clock, bell, watch

criteria presiding over the social embedment of the first mechanical clocks in Late Medieval and Renaissance Europe.

One of the most fundamental and crucial aspects of this early development of mechanical clocks and clock-time is that we see, in the second third of the 14th century, the first *social* uses of *equal hours* outside the sphere of astronomy. Prior to this period, hours of equal length 'were used only in the context of scientific discussions, especially astronomical and astrological ones' (Dohrn-van Rossum, 1996, p. 20). Equal hours might have existed in many forms, but were not socially embedded outside of specific and very small learned microcosms. A device such as the astrolabe, which could translate unequal hours into equal hours, and vice-versa, 'did not, however, become an everyday time-measuring device' (Dohrn-van Rossum, 1996, p. 79).

The equal hours of the clock form the very basis of what I call, following Postone (1993), *abstract time*. They equal 1/24th of the day, they are all equally sixty minutes in duration. With clock-time, the hour acquires its 'equal' mathematical sense, in contrast with the unequal hours of the sundials and water-clocks. As Postone notes, even though water clocks operated on the basis of the uniform flow of water, they were used, prior to the 14th century, to indicate variable or unequal hours. Technologically speaking, it would have been simpler to infer equal hours from the uniform flow of water, but since social time-keeping was predicated on unequal hours, technical devices were added to water-clocks to have them indicate unequal hours (Postone, 1993, p. 204). The equal hours of the clock also contrast with the hour according strictly to the employer's bell,⁷⁰ and the unequal canonical hours of the Church, which had 'adopted the Roman division of the day and structured the liturgy of daily prayers around it' (Dohrn-van Rossum, 1996, p. 29).

Unequal hours that changed lengths according to the seasons were the traditional hours in medieval societies: to the extent that time was kept, it was kept according to those unequal hours. Such use of 'temporal hours' was first introduced by the Babylonian

or dyall but the Monitor's, which clock is never to be altered but by the clock-keeper..." (Nguyen, 1992, p. 36).

⁷⁰ It is unclear as to whether work bells rang unequal or equal hours before mechanical clocks were introduced. There was probably a transition period. See Postone (1993, p. 211).

civilization, and they were also used, notably, by the Greeks and the Romans (Dohrn-van Rossum, 1996, p. 18). With regards to Greek social time reckoning, as Dohrn-van Rossum summarizes,

The Greeks divided the day into three or four segments, which were given designation like 'early afternoon', or were named for mealtimes and various activities. For civil use, nighttime had no division at all, for military purposes it was broken down to three or four segments whose length varied with the seasons. It is not clear whether the calendar day began in the evening, or, following popular usage, in the morning. The use of twelve divisions of the day, of temporal hours, and of 'hora' as an hour's time is attested only from the time of Alexander the Great (Dohrn-van Rossum, 1996, p. 18).

Within this system, there were inequalities both between day hours and night hours and between winter and summer daytime (or night time) hours. The twelve hours of the day were not of the same duration as the twelve hours of the night, except on equinox. The twelve hours of a summer day would each be longer than each twelve hours of a winter day.

Abstract clock-time, then, installs in specific spheres of the social realm the *equal* hours that were previously used in closed, learned, astronomical and astrological circles.⁷¹ Many forms of what Dohrn-van Rossum calls 'modern' hours were used in different regions, and all represented various forms of mixtures between the 'old' unequal hours and features of equal hour reckoning. During this period, various forms of time-reckoning borrowing from unequal and equal hour forms coexisted in the Middle Ages, *after* the introduction of mechanical clocks (Dohrn-van Rossum, 1996, pp. 113-117).⁷² The progressive historical shift in European public - mostly urban - life from unequal to equal hours is not instantaneous, but it is 'unmistakable' (Dohrn-van Rossum, 1996; Glennie & Thrift, 2009, p. 26).⁷³

⁷¹ This does not mean that equal hours are more attuned to the cosmos, see Glennie and Thrift (2009, p. 26).

⁷² Interestingly, 'Prior to the development of modern transportation systems it [the method of counting twenty-four continuous hours starting at midnight] played virtually no role at all' (Dohrn-van Rossum, 1996, p. 117).

⁷³ Importantly, one should not seek to explain the passage from unequal to equal hours solely in terms of the spread of clocks as mechanical devices, as a technological logic. The rise of equal 'abstract' hours, to use Postone's terminology, should be understood in terms of their social significance. Postone illustrates with examples from China, Japan and Spain, how technologies that could strike equal hours, although available well before the 14th century, were not necessarily used in this way in the period when unequal hours had the

In this period, clocks proliferate in European urban centers, predominantly and under the impulse of Italian cities, to Catalonia, Northern France, Flanders, Germany and Southern England.⁷⁴ One can observe in this period the proliferation of clocks and of professions related to clocks; not only clockmakers, but also clock guardians and repairmen (Dohrn-van Rossum, 1996, p. 96). Kings and feudal rulers are active in the process of diffusion (Dohrn-van Rossum 1996, pp. 134-5), which suggests further that merchants and lords' interests were not strictly separated in this regard. Soon, the equal hour of the clock replaces days predicated on unequal hours as the main unit of the time of wage-labour in several European urban textile centers (Le Goff, 1977, pp. 74-5; Postone, 1993, p. 212).⁷⁵ The diffusion of clocks thus appears firmly related to the context of pre-capitalist wage-labouring practices, as Le Goff pointed out, and as Dohrn-van Rossum confirms, 'It becomes clear that the problems of working time had given rise to some sort of need for greater precision, which then manifestly promoted the diffusion of clocks' (1996, p. 297). In this sense, what Le Goff calls the 'new time', the measured time of equal hours, is the historical product of an adaptation to the conditions of urban work, which diffusion also received part of its impetus from interested feudal lords and church authorities (Dohrn-van Rossum, 1996, pp. 134-5). As such, it is inscribed in a pre-capitalist context, and should not be read as an embryonic form of 'always-already' present capitalist rationality embodied in pre-capitalist merchants, which seems, as I will discuss below, to be implied in Le Goff's account.

*

There is a second aspect to Le Goff's thesis. The employers of the feudal textile industry, the Renaissance merchants, do not develop an interest in more precise time-

broader social significance (Postone, 1993, pp. 205-8). Dohrn-van Rossum locates the first unmistakable instance of a 'modern' form of public time-reckoning in Milan in 1336 (1996, p. 130).

⁷⁴ The spread of mechanical clocks is a pan-Western European phenomenon, occurring on the Continent as well as in England in the same period, with some regions lagging a bit behind others. For a list of the first public clocks see Dohrn-van Rossum (1996, pp. 129-134).

⁷⁵ The 'day' remains the main unit of time through which wage earners are paid in England until the 1860s (or so does suggest the historical data). The 'hour' is not the fundamental unit for wage payment as registered in the data before 1860, while in the period between 1750 and 1869, labour was sometimes charged for by both the day and the hour (Clark, 2003, p. 5). However, the work *day* as consisting of *equal hours* is the most common practice of wage payment in England over the late medieval and early modern period.

measurement only from their need to discipline and control wage-labourers in instances where they attend more closely to production - in order to profit from market opportunities, as I have argued. Their interest in time-measurement is also socially manifested in the broader commercial activities linked with this 'market opportunism', and concomitantly in the development of commercial networks in Medieval and Renaissance Europe. Indeed, the broader context of the 'rise' of merchants and deepening of commercial networks at that time poses the problem of time-measurement in a specific way. The rules of reproduction in which are inscribed the activities of Medieval and Renaissance merchants encourage practices such as 'buying cheap and selling dear' and money lending. Profit is made, for example, on the effective and timely delivery of goods from one market to the other, in a context characterized by the existence of many 'separate' local markets - instead of more unified markets. Importantly, the power of such merchants to appropriate surpluses is based on force, for instance the military control of trade routes and markets which was itself based on the extra-economic power of city-states or feudal kingdoms, and on civic powers and privileges such as monopoly privileges (E. Wood, 2003, pp. 56-7). In this sense, as Dohrn-van Rossum points out, the 'new time' of merchants could 'rise', 'only with a strong assistance from the territorial lords' (1996, p. 136).

The enhancement of such commercial activities requires not only knowledge, but also a form of harmonization of the temporalities, time-frames, tempos and time-patterns implied in the many local markets and trade routes which are involved in such trade practices. For instance, in order to be profitable, the buying and selling must occur at favourable 'moments'. Since the time-practices of different local markets are far from being homogenous or integrated at that time, a more general and 'objective' set of abstract time-units can develop as a means for harmonizing, in merchants' activities, different and discrete temporal relations and time-patterns into a more abstract time grid for socio-economic purposes.⁷⁶ Also, the duration of the transportation of goods, the

⁷⁶ Of course, the standardization of time over vast geographical regions is a process that will be long and tortuous. It will have to wait, as we will see, for capitalism to universalize abstract clock-time, and will not be fully fledged until the late 19th century.

fluctuation of prices, the complexification of the monetary domain, add to the social interest for more precise time-measurement (Le Goff, 1977, p. 55; see also Quinones, 1972, p. 5). For Le Goff, the new time of the merchants seems to suggest that time and space come to form the reference frame inside which the movement of goods is conceived.⁷⁷

*

The systematic quantification of time implied in clock-time is a momentous event in the history of time forms. It enables the abstraction of the temporalities, tempos, time sequences and patterns, as well as durations, from the concrete practices and processes to which they belong, and their re-inscription in an all-encompassing abstract framework. I call this process 'commensurability by abstraction'. Clock time quantifies time frames into abstract time-units, it measures, regulates and controls temporality, it rationalizes timing, evens out time patterns and controls time sequences (Adam, 2004, p. 144). These properties of clock-time will play a crucial role in its relationship to capitalist social practices of value formation, as I will argue in chapter III. For now, the prehistory of social processes which make the different qualities of concrete times become quantitatively commensurable is launched.

To summarize, time-measurement in terms of abstract clock-time-units is manifested as a social need in the rules of reproduction of merchants classes which thrive on market opportunity granted by military power and politically constituted trading privileges. The 14th century 'revolution of the clock' is inscribed in these social practices and rules of reproduction. So much so that Le Goff does not hesitate to characterize the town clock as 'un instrument de domination économique, sociale et politique des marchands qui régissent la commune'⁷⁸ (Le Goff, 1977, p. 56). What is crucial to add to Le Goff's hypotheses is that these practices of social reproduction are not conflicting with

⁷⁷ The idea that time is measurable through abstract 'numbering' is of course not a novelty of this period. For one, Aristotle had expressed it more than 1600 years earlier, and coincidentally Aristotle's thought is rediscovered in the Western world, most notably with theologians trying to come to grasp with the heightening of the social manifestation of interest in time measurement, in this very historical period.

⁷⁸ 'an instrument of economic, social and political domination wielded by the merchants who regiment the commune' (free translation).

the rules of reproduction of feudal lords, as the study of the diffusion of public clocks shows that it was amply backed by territorial feudal – and ecclesiastical, for that matter – authorities (see Dohrn-van Rossum, 1996, pp. 197-287). However, as I will discuss below, although clock-time is socially embedded in the social reproduction of medieval merchants, and its diffusion is broadly backed by feudal appropriating classes, it is by no means socially *hegemonic* in feudal social time relations.

*

Le Goff situates clocks at the heart of the ‘new time’ of merchants, which he counterposes to the time of the medieval Church. This opposition had structured in a dominant way accounts of the transition from medieval to modern time, and continued to do so after Le Goff’s intervention. For example, it is present in variable forms in the works of Yves Renouard, Lewis Mumford and Werner Sombart.⁷⁹ In a similar fashion, Jeremy Rifkin depicts the struggle between the Church and medieval merchants as a ‘struggle over competing temporal orientations’ (Rifkin, 1987, p. 156). Postone seems to also frame his analysis around such an opposition (1993, p. 214). In his account, the struggle for cultural hegemony is one between the Church and the urban bourgeoisie. Put in these terms, the picture does not do justice to popular culture, and the cultural outlooks of dominated classes, as I will argue below. The opposition between ‘new time’ and ‘church time’ might not be as sharp as is usually portrayed. Let me look at Le Goff’s argument in order to identify its strength and its fundamental shortcoming.

Le Goff delves into the thick of the contradictions and conflicts between the new time of merchants and the time of the Church by looking at the strife over practices of usury. Usury is mostly practiced by merchants, who are also the money lenders in the

⁷⁹ Renouard situates the emergence of modern time in the change in mentality of Renaissance merchants in Italy (Renouard, 2009). Sombart establishes the ‘public measurement of time’ as one of the modernizing factors brought about by the development of northern Italian city-states, but reads back capitalism in a commercial non-capitalist context, see Dohrn-van Rossum’s discussion (1996, pp. 10-11). Lewis Mumford on his part speaks of a ‘machine age’ characterized by deep changes in conceptions of time, but also points out to the medieval monastery life as a locus of this change, going as far as to suggest erroneously that the Benedictines are the founders of modern capitalism (Mumford, 1967). Dohrn-van Rossum speaks of the diffusion of clock-time as part of a process of ‘urban modernization’, but does not address the embedment of such a process in social-property relations. But more on that below.

medieval context.⁸⁰ However, the Catholic Church historically condemns usury, and this condemnation is based on arguments which relate to the Church's conception of time. Indeed, says the Church, the gains made out of usury presuppose a *mortgage on time*: in other words, money lenders make profit on time. However, time is something that belongs to God. If merchants are 'selling' time, they are thus selling something which does not belong to them, but to God (Le Goff, 1977, pp. 46-7; see also Adam, 2004, pp. 125-6). Moreover, had not Jesus-Christ himself said, 'Lend hoping for nothing again'?⁸¹

For the medieval Church, time belonged to God for the good reason that he had created it. Augustine's writings on time had formed the backbone upon which stood the Church's doctrine on the matter. Augustine had argued in *De civitate dei* that the creation of time was inherent in the creation of the world. 'Before' creation, time did not exist. Time was thus a characteristic of earthly matters, whereas God and divinity were situated on a level of a-temporal eternity. The medieval Church's conception of time thus established a crucial distinction between time and eternity. Put simply, time was a feature of the material world, which would cease to exist in the afterlife, in the immaterial after-world. Time was thus a function of movement and change in the material, physical world, while there was no change in the after-world. In eternity, everything was 'standing still'. As this scholar of medieval ideas puts it, for the Church 'earthly life is time-bound and therefore transitory; heavenly life is time-less and therefore everlasting' (Lie, 2004, p. 202).

Crucially, then, although an 'earthly matter', time belonged to God. He had created it, and the Beginning, as well as the End, were God's attributes.⁸² Time was an earthly matter, but as such it was also an expression of God's power. Creation and Apocalypse were manifestations of God himself, 'I am the Alpha and Omega, the First and the Last, the Beginning and the End'.⁸³ History, according to such a conception, was

⁸⁰ Some wealthy and powerful commercial families – such as the Medici, for example – even sometimes dropped trade altogether to focus their activities on financial services for monarchs and popes, which comprised money lending (see E. Wood, 2003, p. 57).

⁸¹ Luke chapter 6 verse 35.

⁸² It is a recurring feature of mythologies and religious thought all over the cultures of the world that time was deified, see Adam (2004, pp. 6-20).

⁸³ Revelation chapter 22 verse 13.

the history of human salvation through time, a hiatus occurring in a dimension outside of eternity, but still linked to it. It is as if eternity both 'preceded' and 'came after' time and history; historical time was but a breach, occurring in another realm that could establish a bridge between humans and God, history and eternity. Time began with Creation, followed a linear course through the Fall, the Old and New Testaments up to the present, and would continue until the second coming of Christ. History was the history of salvation, of grace, and time itself was but the teleological realm of God's Providence, 'the Christian viewed the whole course of Time, from the Creation to the End of the World, as the drama of God's Providence for the human race; hence, to him, history was in essence teleology' (Brandon, 1965, p. 205). Historical time, as well as human life, here, took the metaphorical form of a pilgrimage.⁸⁴

Le Goff constructs a stark opposition between this 'time of the Church', conceptualized and practiced with regards to the divine, and 'the new time' of the merchants and employers,

Au temps du marchand qui est occasion primordial de gain, puisque celui qui a l'argent estime pouvoir tirer profit de l'attente du remboursement de celui qui n'en a pas à son immédiate disposition, puisque le marchand fonde son activité sur des hypothèses dont le temps est la trame même – stockage en prévision des famines, achat et reventes aux moments favorables, déduits de la connaissance de la conjoncture économique, des constantes du marché des denrées et de l'argent, ce qui implique un réseau de renseignement et de courriers – à ce temps s'oppose le temps de l'Église, qui, lui, n'appartient qu'à Dieu et ne peut être objet de lucre (Le Goff, 1977, p. 47).⁸⁵

To the time of the Church, the time 'leading one to God', the time of sin and grace, Le Goff opposes the time of merchants, laic and profane; clock-time (Le Goff, 1977, p. 56). Gradually over the period starting in the 14th century and characterized

⁸⁴ This theme is common in Catholic thought. For example, Augustine distinguishes between his desire to know and desires arising from his bodily existence in his 'pilgrimage through life' (Augustine, 1961, p. 255).

⁸⁵ 'To merchant time, which is a primordial opportunity for gain, since one who has money considers being able to profit from waiting for reimbursement by the one who does not have any immediately at hand, since the merchant founds its activity on hypotheses based on time itself – storage in anticipation of food shortages, buying and selling at favourable moments, deducted from the knowledge of the economic conjuncture, of constants in the goods and money markets, which implies a network of information and couriers – to this time is opposed Church time, which belongs only to God and can't be an object of lucre' (free translation).

according to the French historian by the rise to social power of the merchant class, Church time will give way to merchant time, i.e. the Church will more or less adopt clock-time in its own doctrines and practices, and its traditional conception of time will evolve accordingly. The example of the relaxation of the condemnation on usury illustrates this thesis.⁸⁶ This process is deemed a great fissure in the mental and material structures of the history of Western civilization. Le Goff thus inscribes the passage to 'modern time' in a model which situates the medieval merchant class' social rise as the foremost factor in the passage to modernity and/or capitalism.

I want to oppose to LeGoff's diagnosis of ideological conflict between the time of the church and the time of merchants/employers three points which rather highlight what they shared in common. These three points are 1) the elements of continuity between monastic time-discipline and the disciplining of the time of labour by medieval employers (while keeping in mind that they are inscribed in socio-historically specific rules of reproduction), 2) the similarities between forms of subjective experiences brought about by the temporal horizons shaped by the time conceptions of the Church and of merchants, and 3) I want to situate both church time and merchant time as forms of, to borrow a term from Mikhail Bakhtin, 'official time'.⁸⁷ Then, perhaps, what is constructed as a stark opposition expressing social conflict between 'old' and 'new' classes and encompassing the bulk of medieval social time relations might be seen from another perspective, namely as but one aspect of intra-dominant class ideological struggles in European feudal social time relations *qua* struggling entity. One might see how church time and the new time might be more complementary than purely opposed.

First, one could posit both *continuity* and opposition, between church time in the form of the time-discipline of monks' lives in the Middle Ages on the one hand, and the time-disciplining of medieval wage-labourers by employers in urban textile centers on the other. As such, when talking of 'church' time, one might also encompass church practices and not only church doctrinal principles. Indeed, monastic life was already disposed along

⁸⁶ For the role played by the Reformation in the processual shift from a conception of time as belonging to God to a conception of time as an object to be saved and a resource to be used, see Weber (1964).

⁸⁷ More on Bakhtin below.

a similar use of time-markers as would become the norm in wage-labour relations in urban contexts. Monastic Christianity, as Landes (1983, pp. 59-60) has noted, was different from Islam and Judaism in the way that time-measurement was performed (see also Adam, 2004, p. 115). For hundreds of years, there were no formally encoded rules, but only practices of religious time-discipline. The innovators in such practices might very well have been Pachomius' religious order, which in the 4th century inaugurated a strict set of time regulation for eating, sleeping, working and praying (Landes, 1983, p. 61). From the deserts of Egypt, these practices spread to other orders, until, in the early 6th century, it was codified in the Rule of Benedict, which instituted a series of standards for monastic life (see also Rifkin, 1987, pp. 95-99). Daily religious offices and services were regulated in terms of *unequal* canonical hours. Throughout the following centuries, the Rule of Benedict was normalized across Western Christendom, while of course each order kept its own amount of idiosyncratic forms and practices.

Monastic life was thus built around a strong sense of time-discipline.⁸⁸ In orders such as the Benedictines, the Clunians, and the Cistercians, among others, the discipline of work and prayer, constituted in a temporal routine, ordered spiritual and labouring life according to time-markers. Every service had its proper time, and the punctuality of actions was central in monks' everyday (and every-night) lives – (the obligation to perform the night prayers might very well have led to the invention of the ancestors of one of today's most hated devices: the alarm-clock.)⁸⁹

But punctuality and time-discipline in the monastery was not only a religious, or spiritual matter. It was also an ordering of labouring activities. As Landes summarizes,

The fixing of a daily schedule of prayer was only part of a larger ordering of all monachal activity, worldly as well as religious. Indeed, for monks there was no distinction between worldly and religious: *laborare est orare* – to work *was* to pray. Hence, there were rules setting times for work, study, eating, and sleeping; rules prescribing penalties and penance for latecomers; rules providing explicitly for the maintenance of the clock and its

⁸⁸ Time measuring was indeed not only a central part of monastic life, but also a continuous source of problems for the Church in general, as the evolution of calendars and its related problems in that period shows (Zerubavel, 1981; Falk, 2008, pp. 45-50). See also Lie (2004, p. 202).

⁸⁹ Historical evidence suggests that alarm-mechanisms appear prior to clocks, and not the other way around (Landes, 1983; Glennie & Thrift, 2009, p. 29). For more details on alarm mechanisms in monasteries, see Dohrn-van Rossum, 1996, pp. 60-61).

nightly adjustment, so that it would wake the sacristan at the proper time... (Landes, 1983, p. 67).

Labouring activities - and not merely worshipping activities - performed in monasteries were thus, before the Renaissance period, already inscribed in a strong sense of time-discipline, and this point often goes unnoticed in the literature.⁹⁰ Monasteries in medieval Europe were not merely spaces of worship cut off from the feudal order, they were fully fledged productive units: some of them represented amongst the largest productive enterprises in medieval Europe, in sectors as diverse as milling, mining, agricultural production, and manufacturing, activities all inscribed in a pre-capitalist context.⁹¹ Monks prayed and worshipped, but they also produced. Moreover, it was not only the monks who worked: monasteries also made use of hired labour.⁹² Surplus was pumped out of monks and hired labourers by extra-economic means predicated on religiously constituted authority resting on the possession of land by the Church in a feudal context where the landed power of the Church was inscribed in the context of feudal property relations: most of the time, even after the Gregorian reformation, the authority of the Church on the land was in many regards inseparable from 'secular' lordly prerogatives (Bloch, 1989, pp. 350-1). The reproduction of the social power of religious orders thus also rested on appropriation of surplus labour by extra-economic means, and as such the Church was a class ally of feudal lords and merchants – in so many cases lordly and Church power were indeed inseparable: church appointments were made under the supervision of lords, and bishops and other church officials were *de facto* owners of

⁹⁰ Glennie and Thrift fail to link monastic time-discipline and labouring practices, 'Much of the monastic impulse to timekeeping revolved around prayers and services, rather than the mechanics of monastic living in itself' (2009, p. 184). They do not take account of how the distinction between praying and working is not automatic in monastic life and they overlook the embedment of monasteries in the feudal order as they more often than not are structurally organized and socio-economically embedded in feudal property relations in a way not different from 'secular' manorial domains.

⁹¹ Dohrn-van Rossum rightly criticized Mumford's depiction of monasteries as 'megamachines', as prototypes of modern factories. Such an anachronistic depiction tends to deform medieval monasticism and the monastic temporal order (see Dohrn-van Rossum, 1996, pp. 33-35).

⁹² Here, the Cistercians are different in that they generally did not make use of hired labour. They did not have peasant tenants, and rather relied on monks living in dormitories, not household plots, to perform the agricultural work. Cistercian orders were generally more isolated from secular society than other religious orders.

land. The point here, however, is that monastic authorities and monks time-regulated their labour and the labour that they hired just as they time-regulated their praying and worshipping activities.⁹³ They used devices such as hydraulic and sand time-keepers, sundials, and bells, and organized monastery life and reproduction with the help of temporal milestones predicated on unequal hours. As such, the time-discipline in medieval monasticism was predicated on *evenemential* time, time here remains a dependent variable, a function of events and processes, rather than an abstract and empty succession of interchangeable units. This point is often overlooked in the literature, especially in accounts which un-differentially read back industrial time-discipline as a product of the ethos of monks, without properly putting both temporal regimes in their socio-historical context. As Dohrn-van Rossum rightly puts it,

Despite this density of activities, the ordering of the daily monastic routine got by with remarkably few indications of time. The beginning of the offices was linked not to a particular point in time but to a signal or short sequence of signals ("signa"). The duration of the offices was determined not by a set period of time but by the prescribed liturgical elements. The remaining segments of the day were, in temporal terms, either added on behind the offices or placed in whatever gaps remained. Temporal values were pragmatic values that were not defined. This has led to the problem that modern reconstructions of the monastic day can be no more than approximations. As for the duration of the elements of the day, it is often overlooked that their timing was intrinsic to them and they were arranged sequentially. Regulations governing time in the Rule [of Benedict JM] were thus rarely directed towards abstract points of time or abstract periods; the same holds true for the later Rules, often many times longer than the Benedictine Rule, and for the customs (consuetudines) that took on binding force. Most designations of time link the beginning of one activity or situation to the end of the previous activity (Dohrn-van Rossum, 1996, pp. 36-7).

In this sense, such temporal disciplining techniques of labour with time-signals and various bells were thus social practices rooted in *both* 'Church time' and 'merchant time'. Monastic time-signalling practices and work bells had proven their efficiency in regulating labour and life in the monasteries for more than 200 years before they were put to use by employers in the medieval urban context. As was mentioned above, such bells

⁹³ One should note underestimate the social inequalities inside monasteries between, for example, monks, lay brothers and hired workers. Medieval monasteries are not isolated islands cut-off from the feudal order: even an order such as the Cistercians which was founded upon a strict isolation from secular society, was encompassed in the feudal order and displayed internal social inequalities (see Alfonso, 1991).

became a source of social strife when the workers refused to 'devote' themselves to their work in the same ascetic way that monks did, but the social practice of time-disciplining itself was related in both cases to practices of social reproduction. In that sense, it is not only a matter of analyzing the conception of time of the Church and opposing it to the temporal practices of merchants. When looking at how Church institutions practiced time-discipline and time-measurement, one sees both commonalities and differences with the temporal practices of Renaissance employers. One could even suggest the hypothesis that the main difference lies in the fact that the mechanical clock and clock-time, as an answer to the need for a 'neutral' time, was not needed in monasteries, as the social reproduction of monks did not allow for challenges to the authority of God's disciplining of time. When time stopped belonging to God and appeared as belonging to the employer, the usurpation and alienation of time became clearer under the rule of work bells: social strife ensued, and it is at this moment that clocks and clock-time made their public appearance as time-regulating devices. The social embedment of clocks and clock-time in that context opened the path to a different form of time, a time that had the potentiality of becoming independent of events and processes. As such, another difference lies in the fact that while monastic temporal order was predicated on evenemential time, on time as a dependant variable, and on unequal hours, one sees the emergence, with so-called 'merchant time', of the prolegomenon of time as an independent variable.

Furthermore, Max Weber has also identified elements of continuity between the time practices of monastic life and the time of the Protestant Ethic. He found some interesting elements of continuity between the rationalized conduct of monastic life with regards to time and the rationalization of time in the Protestant ethic, based in, a (predominantly ascetic) 'systematization of ethical conduct' (Weber, 1964, p.153). While the Reformation played an integral part in the shift of time conceptions from Church time to 'new time', Weber recognized that the time ethos of monastic life prefigured the 'new' concept of time articulated in the Protestant ethic which in turn displays striking similarities with what Le Goff and others have grouped under the heading of 'merchant time'; foremost amongst these similarities is the conception of time as a precious resource

to be precisely measured so as not to be 'wasted'. As such, if one brings into the analysis Protestant conceptions of time which were later to emerge, and not solely time as conceptualized and practiced under Roman Catholic institutions such as the Vatican or catholic religious orders, the opposition between merchant's time and religious conceptions and practices of time, although they differed in important ways, were certainly not as starkly opposed as Le Goff and other commentators would have it in European social time relations at that period.

2) In terms of the subjective experiences brought about through these conceptions of time, other parallels and continuities can be established. The time conceptions underlying sin, in Church time, and debt, in merchant time, both shape one's subjective temporal relation to sin and debt in similar ways, to take only one example. The sinner enters a time extension characterized by a temporal process of penitence and redemption, where the time-present of his or her actions is framed around his or her longing for grace, his or her expectation to recover purity and absence of sin, to be forgiven by God in the future. The debtor, on his or her part, enters a similar time extension which involves a process where his or her time-present is one of penitence (for instance saving in order to pay back) framed around an expectation of redemption (the time of reimbursement). The time-present of the debtor's action is framed around his or her longing for the freedom from the debt bondage. In both cases, sinner and debtor are immersed in a temporality of 'paying back', of experiencing time-present as a time-extension which is *submitted* to a time-future. The time present does not serve its present actuality's purpose *per se*, but some future one. This 'redemptive' framing of time is a classic case of temporal political strategies used by 'those in power', as Rifkin terms it, to 'convince the people to accept the time restraints imposed on them by offering them the assurance of a future reward commensurate with the sacrifices being made' (1987, p. 14). Financial interests and Church power in the medieval period both used that strategy.⁹⁴ Such examples of the temporal relations and subjective experiences of time involved in the 'time of the Church'

⁹⁴ And they certainly continue to do so today.

and the 'new time' again points to commonalities between the two 'times': they are times which seek to shape and dominate the time of others.

3) Another point in common between church time and 'new' time is found in the fact that both Church time and the 'new time' as forms of social time controlled and regulated by political, religious and economic elites, formed, as I will discuss more in details below, 'official time'. Official time as controlled and regulated, as dictated by appropriating classes, therefore displayed characteristics of temporal domination, and one does observe in 'official time' pre-capitalist forms of labour time-discipline. But as I will discuss just below, the existence of such a form of 'official time' is still far from implying a systematized or hegemonic form of temporal alienation in pre-capitalist Europe. In pre-capitalist social time relations, there is also a 'non-official' time, which I will term *processual concrete time*, which governs the bulk of social reproductive practices and popular culture. Appropriating classes do not appropriate surplus through temporal alienation, as I will discuss below, although the Church and commercial interests do develop strategies of social reproduction in which temporal domination is displayed through the creation of an 'official time'.

*

In opposing the time of merchants to the time of the Church, Le Goff points to a fundamental aspect of the evolution of social time relations in the Middle Ages. However, although he recognizes that the time of merchants that slowly erodes the 'dominance' of Church time in medieval consciousness is but a small part of the broader medieval time consciousness, he fails to identify the conceptions and practices of time which permeate 'unofficial' life and which, as a matter of fact, governs much of social reproductive practices in the feudal order. The traditional emphasis of historiographical narratives and practices on dominant cultures tends to blind us to the views and practices held and performed by common people throughout history. Social history 'from below' thus points to the ways in which the conceptions which allegedly ruled previous periods of history were always contested, if not outright marginal when considered in terms of the sheer number of people who held them. For a broader picture of European medieval

conceptions of time, one might look at the history of popular culture, in order to find often neglected conceptions and practices of time which need to be reinstalled in historical and theoretical discourse. The real contrast and struggle here might not be between the time of merchants and the time of the Church, but between the time of dominant social groups and a time that can be inscribed in *grotesque realism* as identified by Mikhail Bakhtin as the paradigmatic world-view of Western European medieval popular culture, and, I add, of feudal reproductive life.

B) Clock-time and pre-capitalist social time relations

One of the most important things to grasp about the preceding discussion is that the *emergence* of clock-time should not be confused with its *universalization*. My argument here aims at nuancing the opinion that the 'revolution of the clock' of the 14th century is actually a 'revolution': some sort of sudden and widespread change. I am more sympathetic to claims such as Adam's, who posits the revolution of the clock as a subtle one, 'which crept up onto people and practices' (2004, p. 112), and to Postone's suggestion that 'abstract time' did not 'become generalized until much later' (1993, p. 212). Then again, the spread of clock-time to the social field is not a mere quantitative increase. I will argue that there is a qualitative gap between pre-capitalist clock-time and capitalist clock-time which is brought about by the fusion between social value and clock-time and by the rise of clock-time to a *hegemonic* position in capitalist social time relations. I will posit in chapter III that the 'real' revolution of the clock occurs with the consolidation of industrial capitalism, and that it is capitalism that will truly 'revolutionize' social time relations. As such, it will become clear that just as capitalism is not the result of a quantitative growth in trade and commerce, but of its mediation through a qualitative reconfiguration of social-property relations, the rise to social hegemony of clock-time is not the product of a quantitative spread of clocks or clock-time practices, but of the qualitative reconfiguration in social time relations brought about by the embedment of clock-time in the formation of social value.

Although clocks and clock-time did start to regulate feudal wage-labouring practices in certain sectors of medieval manufacturing from the early 14th century onwards, it has to be kept in mind that over 80-90% of the population in medieval Europe were peasants labouring the land in rural settings (Hilton, 1985a, p. 121). The bulk of medieval life therefore remained anchored around social time relations predicated along the organizing structures of feudal agricultural (re)productive activities where leisure, social intercourse and work time were not separated. Producers did not even out their efforts to make it constant according to abstract equal time-units, rather, most of the 'work pattern was one of alternate bouts of intense labour and of idleness, wherever men were in control of their own working lives' (Thompson, 1993, p. 373). These social time relations remained closely related to the organization of agrarian production, which socially mediated cycles and change in nature. Throughout the medieval period, labouring activities, except for small and specific microcosms, remained predicated on the socially mediated natural (solar) day, the concrete passage of seasons, the cycles of birth, decay and death of people, animals, plants and crops; light and dark, heat and cold, health and sickness; the traditional skills of artisans and labourers and their respective concrete temporalities and time, in a word the concrete times of the land and of life on the land. Le Goff himself nuances the 'revolutionary' character of 'merchant time' when discussing the spread of mechanical clocks and the social struggles over the time of labour in medieval Europe,

Ici encore il ne faut pas exagérer. Pour longtemps encore le temps lié aux rythmes naturels, à l'activité agraire, à la pratique religieuse, reste le cadre temporel primordial. Les hommes de la Renaissance – quoi qu'ils en aient – continuent à vivre dans un temps incertain. Temps non unifié, encore urbain et non-national, en décalage par rapport aux structures étatiques qui se mettent en place, temps de *monades urbaines* (Le Goff, 1977, p. 75).⁹⁵

⁹⁵ 'Here one should not exaggerate. The time linked to natural rhythms, agrarian activity, religious practice, remains the primary temporal framework. Renaissance men – even though they have some – still live in an uncertain time. A non-unified time, still urban and non-national, lagging behind state structures which are being laid down, a time of *urban monads*' (free translation).

This highlights the isolated and relatively modest character of the 'revolution of the clock' when put in the broader context of pre-capitalist society (see also Postone, 1993, p. 212). Le Goff then continues,

Ce qui le souligne c'est la diversité du point de départ du temps nouveau, de l'heure zéro des horloges : ici midi et là minuit, ce qui n'est pas grave, mais plus souvent le lever ou le coucher du soleil encore, tellement le temps préindustriel a de peine à décrocher du temps naturel. Montaigne, dans le *Voyage en Italie*, après d'autres voyageurs des 15^e et 16^e siècles, note la confusion, le désordre qui naît de ce temps à l'origine changeante d'une ville à l'autre (1977, p. 75).⁹⁶

So, not only is clock-time not directly affecting the bulk of productive activities in that context, it is also confined to small geographical spaces and significantly changes its forms from one local urban space to the next.

It is in this light that I suggest that the main struggle at work in medieval social time relations might not be between Church time and merchant time, but rather one between *official time*, whether in the form of 'Church time' or the time of merchants, and *processual concrete time*, the time of life on the land, the time which springs out from the bulk of social and (re)productive life. Processual concrete time is expressed through a vibrant popular culture which Mikhail Bakhtin (1984) refers to as 'grotesque realism'. More precisely; looking at the conflict between official time and the concrete temporalities of feudal agricultural life and popular conceptions of time as expressed in grotesque realism illustrates the fundamental qualitative leap from pre-capitalist European feudal time to capitalist time. In other words: in reconstructing pre-capitalist social time relations as a struggling entity involving official and processual concrete time, one can locate qualitative differences between the ways in which clock-time is embedded in pre-capitalist social time relations on the one hand, and capitalist social time relations on the other. This qualitative difference revolves around the question of the *universality* of clock-time as a social regulator, i.e. its direct involvement in value formation as well as

⁹⁶ 'What underlines it is the diversity of the beginning point of this new time, of the zero hour of clocks : here noon and there midnight, which does not make such a big difference, but more often sunrise or sunset still, as preindustrial time can't quite escape from natural time. Montaigne, in *Voyage en Italie*, after other travellers in the 15th and 16th centuries, notes the confusion, the disorder which is born from this changing origin of time from one city to the other.' (free translation). The second part of the quote highlights the geographical unevenness of social time which would remain until much later.

its unification across space which will make it the hegemonic time-form in capitalist social time relations, while clock-time is neither hegemonic nor universal in pre-capitalist social time relations. Concrete social time is here a function of events, processes and human concrete practices of social reproduction.

In such a setting, as one could expect, weather and time are closely related, and some languages have kept this homonymic relation between them. A French speaker, for example, will refer to the weather as '*le temps qu'il fait*', one will often hear, in French weather forecasts, expressions such as '*le temps sera doux*', '*nous prévoyons du beau temps*', or '*quelques jours de temps pluvieux*'.⁹⁷ This illustrates how time here appears as a *quality* - a cluster of sensuous experiences and socio-natural processes whose rhythms inform the concrete times of life on the land - rather than a quantity or a series of empty quanta. In a similar way, as Le Goff reminds us, pre-capitalist agricultural labour and societies remained for the most part settings in which the expense of labour remained in a strong sense *qualitative*, not *quantitative*,

En gros le temps de travail est celui d'une économie encore dominée par les rythmes agraires, exempte de hâte, sans souci d'exactitude, sans inquiétude de productivité - et d'une société à son image, sobre et pudique, sans grands appétits, peu exigeante, peu capable d'efforts quantitatifs (1977, p. 68).

Now, this concrete time of labour on the land, the concrete time of human life in a context where agricultural production is the primary form of engagement between humans and socially mediated processes of natural change, is relatively impervious to abstract clock-time in the pre-capitalist period. This can be explained in part by the relative absence of control by the appropriators (lords) over the actual labour process.⁹⁸ I have pointed out how in urban textile centers the work bells and clocks were used by employers to temporally discipline the work force - in a limited and contested process -

⁹⁷ Which could be respectively translated as 'the present weather', 'the weather will be nice', 'a beautiful forecast', and 'there will be several rainy days'.

⁹⁸ Labour process is here understood in Marx's terms, as '(1) purposeful activity, that is work itself, 2) the object on which that work is performed, and 3) the instruments of that work' (Marx, 1976, p. 284). I add to this the concrete times entailed in the labour process itself. Interestingly, it should be pointed out that although lords did not directly control labour processes, in the open field system they were sometimes fixed by law, thus creating, to some extent, a form of 'legally official time' predicated on agricultural and seasonal temporal relations.

in order to take advantage of market opportunities. The time of labour was relatively disciplined by the employers, while the labour process itself remained to a large extent under the labourers' control. In an even clearer fashion, in the countryside, and as such in the bulk of medieval life, lords do not supervise, control or manage the labour processes: their social power and control over the peasants is rather expressed in political, military and juridical powers of appropriation which do not entail the control over the labour process *per se*, in other words, these powers are not matched by any 'economic' power over labour *per se*. The extraction of the surplus from peasants by lords is performed by 'extra-economic' means, be they raw military power, political status, religiously constituted authority, or legal constraints, and the specific forms taken by the powers of appropriation vary from one specific feudal context to another. In short, the appropriation of surplus product in feudalism occurred through 'non-economic' means. As Hilton points out,

...lords, with their armed retainers and their far-reaching private or public jurisdictions, had by no means complete control over the servile peasantry. In particular, their military and political power was not matched by their power to manage the agrarian economy. (...) he [the lord JM] was not able to determine the application of labour and other resources within the economy of the holding (Hilton, 1985a, pp.125-6).

This fact is also illustrated by the relative absence of productivity gains in agricultural production in this period.⁹⁹ Indeed, whereas most economic theories tend to ascribe capitalism's relentless drive for technological development, its 'constant drive to revolutionize the productive forces', indiscriminately to other social systems, actual figures of the feudal (lack of) agricultural productivity gains have been well underlined by economic historians, 'The inertia of medieval agricultural technology is unmistakable. Some progress there was, but it was, so to speak "bunched" into certain periods at the beginning and end of the era. Over the Middle Ages as a whole it was slow and uneven...' (Postan, 1975, p. 73). This lack of technological and labour-productivity gains is related to the prevailing social-property relations and their specific rules of

⁹⁹ 'Productivity gains' being here understood of the kind we would expect in capitalism, through investment in productive techniques or crops for example. However, the open field system, in the period from roughly 1050-1250 did unmistakably see an increase in *social* productivity. For more on this see Comninel (2012, pp.131-137).

reproduction, which directed surplus investments toward 'political accumulation', i.e. the strengthening of the lords 'extra-economic' apparatus of surplus extraction, instead of directing the surplus to investment and innovation in agricultural production *per se*. In Brenner's words,

The inability of the serf-based economy to innovate in agriculture even under extreme market pressures to do so is understandable in view of the interrelated facts, first, of heavy surplus-extraction by the lord from the peasant and, secondly, the barriers to mobility of men and land which were themselves part and parcel of the unfree surplus extraction relationship (...) the lords most obvious mode of increasing income from his lands was not through capital investment and the introduction of new techniques, but through squeezing the peasant (Brenner, 1985a, p. 31).

In such a context, the time of feudal agriculture was not subject to the spread of social temporalities predicated on productivity, or on the control of the labour process by the appropriating class.

E.P. Thompson has identified the temporal organization of work in pre-capitalist peasant societies as 'task-oriented' (Thompson, 1993). By this he meant that the time of work seemed to be dictated by the concrete tempos, time patterns and time extensions of the tasks at hand. This statement might need to be amended, since the sheer diversity of temporal systems found in such societies all over the world might prevent one from bundling them all under the notion of 'task-orientation'. One might be more specific to European medieval 'landed' temporalities by looking at medieval and Renaissance's culture of folk humour, its aesthetic paradigmatic imagery of grotesque realism, in order to sketch out what I will term its *processual concrete time*. Accordingly, I may provide a more specified picture of pre-capitalist time than the one sometimes found in accounts which speak of the old European world as merely displaying 'a vast indifference towards time' (Bloch, 1989, p. 118).

Furthermore, one needs, in such an endeavour, to avoid simple oppositions like the idea of a rural *natural* time superseded by an urban *clock*-time, since 'natural time', in any case, is always already socially mediated. The distinction between urban and rural is often misleading when talking about time-reckoning (Glennie & Thrift, 2009, p. 176), and

this is one reason why I frame this discussion around the distinction between official time and processual concrete time instead of 'urban' and 'rural' times.

A fruitful way to look at the conceptions of time of the popular culture of the medieval peasantry and town-dwellers is to mobilize Bakhtin's discussion of grotesque realism. In his study on Rabelais and medieval popular culture, Bakhtin re-inscribed Rabelais' oeuvre in the context of this popular culture. Through his notion of grotesque realism, an aesthetic concept which encompasses the imagery and form of this popular culture, Bakhtin highlighted its bodily materiality and the concreteness of its life and cycles. What is interesting in putting Bakhtin's concept to work in the present analysis is that it covers the later period of the Renaissance: some 150 to 200 years after the introduction of clock-time in pre-capitalist social time relations. Crucially, then, one can observe that clock-time has not penetrated popular culture and the bulk of social reproductive practices. It has not imposed its temporal framework on it, it has not colonized it in any meaningful way. Indeed, conceptions and practices of time expressed in grotesque realist culture are oppositional to both church time and merchant clock-time, they do not display signs of a social embedment of clock-time in the bulk of reproductive life.¹⁰⁰ Let me have a look at this processual concrete time which is a fundamental - but overlooked in the literature - part of pre-capitalist social time relations.

The popular culture of folk humour, to start with, is not an isolated or marginal phenomenon in the Middle Ages and Renaissance period. 'The scope and importance of this culture', writes Bakhtin, 'were immense in the Renaissance and the Middle Ages' (1984, p. 4). Manifested in carnivals and comic spectacles and rituals,

all these forms of protocol and ritual based on laughter and consecrated by tradition existed in all the countries of medieval Europe; they were sharply distinct from the

¹⁰⁰ Although the dualism that Bakhtin constructs between popular and official culture must, as McNally (2001) has argued, be submitted to critique in order to show how opposing cultures might blend and mix, the point remains that Bakhtin offers us a clear example of how the focus on the time of merchants and the time of the church as the main oppositional struggle in medieval social time relations occludes the very cultural practices which defined the temporal experiences for the majority of the population in the Middle Ages. Also, even though 'official' and processual concrete times in medieval social time relations might blend and mix as they are part of a struggling entity, clock-time as embedded in the social reproductive practices of certain ruling classes do not appear to have replaced, or blended to a significant extent, with the processual concrete time of popular culture.

serious official, ecclesiastical, feudal and political cult forms and ceremonials. They offered a completely different, nonofficial, extraecclesiastical and extrapolitical aspect of the world, of man, and of human relations; they built a second world and a second life outside officialdom, a world in which all medieval people participated more or less...' (Bakhtin, 1984, pp. 5-6).

The popular culture of folk humour expressed very distinct and rich conceptions and practices of time.¹⁰¹ First, this culture focused on what Bakhtin terms 'the material bodily lower stratum', and was predicated along notions of sensuousness and a tone of play. It was manifested through carnivals, comic verbal compositions and some specific manifestations and genres of 'familiar speech'. Carnivals are of special interest here, since they point to a specific practice of time in medieval life. Carnivals were not mere spectacles, although they were full of them; everyone participated in carnivals; life was absorbed by its rules and forms, which were characterized by freedom from religious and official piety and oppression, as well as by the temporary suspension of all hierarchic distinctions and official temporalities, be they religious, civil or political. This time of freedom of the carnival shaped medieval men and women's temporal experiences to a great extent. Even in purely quantitative terms, on average three months a year were devoted to such festive suspensions of official hierarchies and times.

Every image and form of official culture, including existing official times, were subject to folk humour laughter. To such official times were opposed a processual concrete time of bodies and the lower material bodily stratum, with its grotesque images and forms of defecation, bellies, eating, sexual intercourse, birth and death. In such a cultural form, this bodily element is not gross or disgusting, but rather the opposite, 'in grotesque realism, therefore, the bodily element is deeply positive'.¹⁰² The temporal life manifested through this body is the 'continually growing and renewed' life of the people, it 'refers not to the isolated biological individual, not to the private, egotistic "economic

¹⁰¹ I here focus on carnivals and folk humour as it relates to its oppositional culture with regards to official time, but it should be noted that these also display strong oppositional practices and conceptions in terms of sexual repression and social hierarchy in general. My focus on time is not meant to downplay these other features.

¹⁰² On a similar register but in a different (African) context, 'obscenity', noted Evans-Pritchard, 'gives stimulus and reward to the workers during periods of joint and difficult labour' (quoted in Thomas, 1964, p. 54).

man", but to the collective ancestral body of all the people (...) the material bodily principle is a triumphant, festive principle, it is a "banquet for all the world". The laughter of grotesque realism degrades and materializes, it brings back what is 'ideal' and 'heavenly' to materiality, to the earth and the body that 'swallows up and gives birth at the same time' (Bakhtin, 1984, pp. 19-21). In terms of temporality and time, then, grotesque realism is not predicated on the times of religious, political and economic elites, but rather on an opposition to such official forms based on the concrete social time of the unfolding socially mediated processes of renewal of nature, the collective ancestral body, and the material bodily principle.

The medieval feasts are particularly telling phenomena in that regard: while official feasts sanctioned existing patterns of power relations, carnival feasts created 'a second life for the people, who for a time entered the utopian realm of community, freedom, equality, and abundance'. Accordingly, each form of feast was linked to a different conception of time.¹⁰³ The *official* feasts of the Middle Ages, be they ecclesiastic, feudal, or state-sponsored, had a *formal* link to time. These feasts 'asserted that all was stable, unchanging, perennial: the existing hierarchy, the existing religious, political, and moral values, norms and prohibitions'.¹⁰⁴ They made use of the past to consecrate the present, eternalizing it as an indisputable order. The *popular* feast, in contrast, was *essentially* related to time, 'either to the recurrence of an event in the natural (cosmic) cycle, or to biological or historic timelines' (Bakhtin, 1984, p. 9). Death, birth, survival, change and renewal characterized the temporality of the popular feasts which were based on such natural, social and personal events.¹⁰⁵ Bakhtin tells us that

¹⁰³ Keith Thomas notes the resolutely 'pre-industrial' character of feast time, as well as the reversal of social roles occurring in such settings. See Thomas, 1964, pp. 53-4.

¹⁰⁴ The history of 'official' holidays is full of examples of its political implications. For instance, the very fact that Christmas is celebrated on December 25th stemmed from the Church's desire to challenge and confront the pagan's winter solstice rituals by superimposing Christmas over it.

¹⁰⁵ It is important to note that the temporality of Renaissance grotesque realism is not simply a cyclical one. Although archaic forms of grotesque realist images do emphasize the cyclical temporality of natural and biological life, with an imagery of seasons, sowing, reaping, growth and death, over the millennium through which these images evolved, the consciousness of social and historical time was integrated in the cycles: a sense of historic time came to complement a cyclical conception of time. In the Renaissance period, 'the grotesque images with their relation to changing time and their ambivalence become the means for the

The grotesque image reflects a phenomenon in transformation, an as yet unfinished metamorphosis, of death and birth, growth and becoming. The relation to time is one determining trait of the grotesque image. The other indispensable trait is ambivalence. For in this image we find both poles of transformation, the old and the new, the dying and the procreating, the beginning and the end of the metamorphosis (Bakhtin, 1984, p. 24).

Such conceptions and practices of time and their focus on temporality contrasted sharply with the official culture of time,

As opposed to the official feast, one might say that carnival celebrated temporary liberation from the prevailing truth and from the established order; it marked the suspension of all hierarchical rank, privileges, norms, and prohibitions. Carnival was the true feast of time, the feast of becoming, change, and renewal. It was hostile to all that was immortalized and completed (Bakhtin, 1984, pp. 9-10).

This popular time, a form of processual concrete time, shaped and filled feudal social time relations to a great extent, and was opposed to the dominant conceptions and practices of time brought forward by ruling classes such as the 'new time' or the 'time of the Church'.

Therefore, pre-capitalist Western European social time relations should not be analyzed merely in terms of ascending proto-bourgeois conceptions and practices of time slowly eroding and colonizing mutating conceptions and practices of time related to the Catholic Church. Social time relations in this period should rather be viewed as a struggling entity in which these two forms contrast sharply from the conceptions and practices of time of popular realism and of the bulk of social reproductive life. Thus, alongside the conceptions of time that Le Goff and most of historiography place at the apex of the Middle Ages, namely the time of God and Church theology and practices, the evenemential time of town bells and monastic life, and the constant uniform time of merchants, there is a whole other time: the *processual concrete time* of popular folk culture and socio-material reproductive practices. All these times are part of the cluster of struggling conceptions and practices of time which were evolving, were in process, in late medieval Western European social time relations.

artistic and ideological expression of a mighty awareness of history and of historic change which appeared during the Renaissance' (Bakhtin, 1984, p. 25).

Le Goff's shortcomings stem in part from the fact that he mistakes pre-capitalist urban commodity production for the birth of capitalism. He thus cannot appreciate the qualitative difference between capitalist and pre-capitalist social time relations; he reads back clock-time as motivated by 'capitalist' enterprise in pre-capitalist processes. In the same line of thought Robert Hassan, in his otherwise masterful and penetrating work, reads back medieval merchants as the 'nascent capitalist class', and the spread of clock-time is just the inevitable outcome of the inevitable emergence of capitalism from the quantitative expansion of trade and commerce (Hassan, 2009, p. 54), which leads him to not fully appreciate the specific relationship between clock-time and capitalism, nor to adequately differentiate between pre-capitalist and capitalist social time relations. In such analyses, capitalism seems to be taken for granted as the inevitable outcome of a quantitative growth of trade and commerce. Meanwhile, the 'why' question, i.e. why did clock-time go from subtle to revolutionary, from isolated to hegemonic, is not rooted in a historically informed qualitative distinction between pre-capitalist and capitalist social time relations, nor is it systematically tied to an examination of the relationship between clock-time and capitalist value rooted in historically specific social-property relations which will give clock-time its truly 'revolutionary' and 'hegemonic' impulse.

While the time of labour was 'organized' in pre-capitalist wage-labour practices in specific social microcosms where merchants adapted production in order to profit from market opportunities, the proportion of the total social time of labour affected by this process is not overly significant, and neither is the level to which the labour process itself is 'clock-time-disciplined'. When contextualizing pre-capitalist wage-labour, as well as identifying the temporality of popular culture (associated to the bulk of productive life) as one fairly devoid of the influence of clock-time, one reaches the conclusion that the 'revolution' of the clock of the 14th century did not amount to a once-and-for-all shift in the time conceptions and practices of medieval European societies, and that clock-time remained in a non-hegemonic position in pre-capitalist Western European social time relations.

I therefore suggest that the totalizing logic behind clock-time in the capitalist period is not endogenously a function of clock-time *per se*. Abstractions do not become totalizing 'on their own'. It is in specific social contexts that abstractions can acquire a power of their own. Capitalism provides such a social context in which alienated social relations (re)produce abstractions and reification. Clock-time under capitalism will undergo a fundamental qualitative change in the way in which it is socially embedded. Capitalism will universalize clock-time as its hegemonic form of social time relation.

In the period of the spread of mechanical clocks and clock-time, one observes forms of temporal domination, as well as social conflicts occurring around such processes. However, temporal alienation is not a *systematic* or *hegemonic* feature of pre-capitalist social time relations. For all our differences to which I will come back below, Glennie and Thrift seem to agree with me on this specific point, 'Of course, this is not to say that the mechanical clock did not disrupt people's consciousness of time in the late Middle Ages. It did. But it did not create a 'modern' time, or a 'universal' time' (2009, p. 91). When there are no capitalist social relations, or when they are not the dominant social-property relations in society, one does not observe the unification of clock-time into a hegemonic time-system. Commodity production and clock-time are thus, logically and historically, intimately related, but in a non-capitalist context, clock-time and commodity production stay confined to social microcosms and their relation, predicated on the time of labour but not yet on the labour process itself, is not *systematic*. In terms of geographical spread, clock-time affects only *unconnected urban monads* (Dohrn-van Rossum, 1996, p. 323; see also Le Goff, 1977). Clock-time arises from social processes and conflicts, as well as property relations dynamics associated with commodity production, but the *fusion* between clock-time and social labour through processes of *capitalist* value formation will not occur until capitalism becomes the dominant form of social-property relations, as I will discuss in the next chapter.

C) The transition from feudalism to capitalism

In order to assess the relationship between clock-time and capitalism, or in other words to circumscribe the socio-historical processes at the root of the universalization of clock-time to capitalist societies, I need to clear some historical ground with regards to the origins of capitalism. If, indeed, I am to argue that something such as 'capitalist time' even exists, I have to leave no doubt as to how I understand capitalism, and as pointed out in the previous sections I do not understand it as the inevitable outcome of a quantitative growth of feudal commercial activities. Here, I privilege the thesis that agrarian capitalism represents the historical transitional phase from feudalism to capitalism. This transitional phase is of interest to this study because it highlights some of the specificities of capitalism, as well as some of its basic features. The historical transition to capitalist social relations in the form of agrarian capitalism, however, did not produce a fully-fledged capitalism, nor fully-fledged capitalist social time relations.

*

The question of the transition from feudal to capitalist societies has produced a very heated historiographical debate. The long-standing orthodoxy in social history revolving around demographic and commercial models of the transition to capitalism has been, however, successfully challenged by the work of historian Robert Brenner in the 1970s and 1980s. Brenner's work, in the 'transition debate', proposed that capitalism emerged in the English countryside, as a product of *qualitative* changes in the agrarian class structure, from the late 15th century onwards (Brenner, 1985a).

Brenner's concept of 'agrarian capitalism', as the transitional phase between feudalism and capitalism, points to a specific social process occurring in the English countryside in that period, displaying an increasing separation of producers from the means of production and means of subsistence, and a growing *dependence* on the market of both producers and appropriators for their social reproduction. Concomitantly, there is a gradual spread of market imperatives in a social field where the rules of reproduction of both appropriating classes and producing classes give rise to emerging capitalist social-property relations. These processes are not the result of a mere quantitative increase in feudal commerce and trade, but are predicated on qualitative changes in the structure of

social-property relations and in the rules of reproduction of both producing and appropriating classes in which market-mediation will come to play an integral part.

The 'agrarian class structure' that Brenner is drawing attention to in his writings on the transition and which deploys the processes associated with the transition is the oft-cited agrarian 'triad' composed of lords, tenants and wage-labourers, specifically found in the English countryside. This specific class structure was itself the result of historical processes shaped by class conflicts over the appropriation of surplus labour (Brenner, 1985a, 1985b; Comninel, 2000; E. Wood, 2002). Those processes of surplus appropriation were not predicated along the same class structures evenly across Europe. Indeed, it is crucial to recognize, as Wood points out, that 'European feudalism in Europe was internally diverse, and it produced several different outcomes, only one of which was capitalism' (E. Wood, 2002, p. 73).

This historical understanding points to the English/agrarian origins of capitalism, in contrast with accounts that see capitalism as the quantitative acceleration of – mostly urban - processes (commerce and trade) that were 'fettered', in one way or another, under European feudal social relations. In such accounts which emphasize the 'un-fettering' of always-already capitalist processes, capitalism is often seen as pan-European undifferentiated outcome of feudalism. Quantitative explanatory narratives such as these tend to focus on urban centers as the birthplace of capitalism. Brenner's thesis shatters both the presupposition that capitalism is a pan-European outcome of feudalism and that capitalism emerges in the city. On this last point, as Wood points out, in order to treat capitalism as 'a historically specific form with a beginning and, potentially, an end', as the product of social dynamics which were not always-already capitalist, we must 'disentangle *capitalist* from *bourgeois*, and *capitalism* from the *city*' (E. Wood, 2002, p. 74).¹⁰⁶

¹⁰⁶ A good headway into such a disentanglement is to untie the equation city=commodity production. Although we have seen how urban centers seem privileged centers of manufacturing in the Middle Ages, the example of the shift of the manufacturing industry in late medieval and early modern England from the urban centers to the small towns and villages where there is a growth of small-scale commodity production gives us a clue as to the importance of small towns and villages in commodity production during the transition to capitalism (Hilton, 1985a, p. 136). I will say more on the rise of industrial capitalism in chapter III.

One advantage of the thesis of agrarian capitalism is its discarding of narratives which tend to imply that capitalism was the product of a more 'advanced' stage in economic development that would have been specifically (pan-)European. There have been, in history, many civilizations around the globe that have developed social structures that one could qualify as more 'developed', or 'sophisticated', commercially, scientifically and technologically, than English feudalism. Once it is recognized that capitalism is not the product of a quantitative growth of material wealth, or cultural and social sophistication, or 'urban rationality', or of the 'autonomy' of urban centers that were thus able to 'free' themselves from 'fettering' rural feudal social relations, one needs to look at *qualitative* configurations of social relations in order to identify what gave rise to capitalism.

One fruitful way to tackle this question of qualitative difference is to pursue the distinction, touched upon earlier, between market *opportunity* and market *imperative*. Markets have existed throughout world history in many different contexts, times and places, *without* leading to capitalism. An increase in market activities is not enough to bring about capitalist markets, since capitalist markets are *qualitatively* different from pre-capitalist and non-capitalist markets. Throughout this chapter I have described medieval commercial markets as *opportunities* for appropriation by a medieval merchant class which used politically and militarily constituted privileges to secure their control over parts of medieval networks of trade and commerce. Medieval local markets were also an opportunity for peasants to sell their surpluses. Hence in the context of European feudalism, market opportunity refers to the existence of both international markets in luxury and other goods, and local markets in which peasants could sell surpluses. Such market exchanges were a common practice and explain monetization and, among other things, why lords could ask for cash rents. However, a crucial qualitative point is that peasants did not *depend* on the market for survival. They had direct access to their means of subsistence, which they employed to produce the bulk of what they consumed. Merchants, for their part, thrived on market opportunities, but were not subjected to a unified market driven purely by price competition. Lords did not depend on markets for

their social reproduction or the reproduction of their social power as lords. They rather resorted to strategies of political accumulation and developed 'extra-economic' means to appropriate surplus from peasants. Pre-capitalist markets in this socio-historical context were in this sense an *opportunity*. Market *dependence*, contrastingly, is distinctively capitalist, and is based on market *imperatives*: producers are *compelled* to sell their labour-power on the market to survive, since their direct access to their means of reproduction and means of subsistence has been severed. Appropriators, for their part, *depend* on the market both to appropriate labour-power and to realize surplus-value. They are subjected to the price competition of a more unified capitalist market compelling them to follow rules of reproduction predicated on cost-effective production and labour productivity (E. Wood, 2003, p. 56). These market imperatives thus form an integral part of the rules of reproduction of both producing and appropriating classes under capitalist social-property relations. This qualitative difference between market as an opportunity and market as an imperative underlines the qualitative distinction between pre-capitalist and capitalist markets and implies a qualitative differentiation between social-property relations that are not capitalist, and capitalist social-property relations.

This does not mean that trade, commerce and the spread of markets were insignificant in the emergence of capitalism. It rather means that the way in which early modern changes in commerce, industry and population were mediated by the specificity of English agrarian class relations gave rise to a qualitatively different socio-economic logic in England in contrast to other specific developments in continental Europe. As this scholar points out:

The rise of trade in early modern Europe is indeed a contributing factor, and there could have been no capitalism without it. But all other factors being equal, it is the peculiarity of English class relations which set the English economy on a new path, whereby changes in commerce, industry and population yielded completely different results in England than on the Continent (Zmolek, 2000, p. 145).

From such a perspective, it becomes possible to distinguish between 'capitalism' and 'commerce', 'the critical factor in the divergence of capitalism from all other forms of "commercial society" was the development of certain social-property relations that

generated market imperatives and capitalist "laws of motion", which imposed themselves on production' (E. Wood, 2002, p. 76).

Capitalist social-property relations display a specific form of surplus appropriation, namely the historically specific 'economic' form through which surplus labour is pumped out from the producers by the appropriating class. This specific form of surplus labour transfer, related to the commodification of human labour, historically gave rise to the 'pressures of competitive production and profit-maximization, the compulsion to reinvest surpluses, and the relentless need to improve labour-productivity' (E. Wood, 2002, p. 76), on the part of appropriators. Contrastingly, one does not observe this relentless drive to reinvest surpluses in agriculture or industry in the practices of medieval lords and/or merchants, 'they were little interested in productive investment, whether in agriculture or industry' (Hilton, 1985b, p. 4). The producing classes, for their part, are compelled to enter the market in order to have access to the means of production and their means of subsistence, while pre-capitalist market opportunity did not entail such compulsions in a context where producers had 'un-marketized' access to both means of production and means of subsistence. In a word: in capitalism, both producing and appropriating classes' rules of reproduction become mediated by market imperatives. I consider this form of surplus appropriation, these pressures of market imperatives, and the separation of direct producers from their means of subsistence and the means of production, as specific features of capitalism.

Capitalist social-property relations emerge in England in relation to the process of consolidation of holdings by landlords. This process of consolidation was, among other things, inscribed in the lords' strategies for the reproduction of their social power as a means to prevent the spread of free-holding. Landlords, then, leased those holdings to farmer-tenants, who farmed them by hiring wage-labourers. The development of a market in leases is a crucial component of this process, as tenants and landlords relied increasingly on the market to fix the price of leases. Such developments were made possible because farms, in various parts of England, became 'separated out of the system of collective regulation, and common rights and obligations, that characterized the

medieval peasant agricultural community' (Comninel, 2000, p. 32). The roots of this divergent development can indeed be traced back to the differentiated form of feudal social relations in England, especially the absence of *seigneurie banale*, which played a crucial role in French feudal relations. As George C. Comninel summarizes,

The effects flowing from this initial basic difference in feudal relations include: the unique differentiation of freehold and customary tenures among English peasants, in contrast to the survival of allodial land alongside *censive* tenures of France; the unique development of English common law, rooted in the land, in contrast to the Continental revival of Roman law, based on trade; the unique commoner status of English manorial lords, in contrast to the Continental nobility; and, most dramatically, in the unique enclosure movement by which England ceased to be a peasant society - ceased even to have peasants - before the advent of industrial capitalism, in stark contrast with other European societies (Comninel, 2000, p. 4-5).

This architecture of social-property relations which developed in the English countryside from the late 15th century onwards, led to 'rules of reproduction' which generated an interest for both landlords and tenants to improve the productivity of the land. This 'mutual interest' is referred to by Brenner as a 'symbiosis', 'the displacement of the traditionally antagonistic relationship in which landlords squeezing undermined tenant initiative, by an emergent landlord/tenant symbiosis which brought mutual co-operation in investment and improvement' (Brenner, 1985, pp. 46, 51). Comninel speaks on his part of 'mutual benefit',

Together, these landlords and tenants (with the latter providing at least a substantial amount of operating capital) restructured agrarian production for their mutual benefit. Above all this meant, through one or another form of enclosure, either escaping from, or extinguishing, the normative regulation of land use by the customary peasant community (Comninel, 2000, p. 46).

This 'shared interest' led to productive investments of surplus in the organization and techniques of production on the land, and to the resulting higher productivity that set the English agrarian economy apart from other continental European countries in this period, especially seen in the light of it remaining relatively impervious to the general crisis of the 17th century which struck the European Continent. Crucially, the advent of agrarian capitalism also put the control over production in the hands of capitalist tenants in a way that pre-capitalist wage-labour relations had not reached, prefiguring the full

capitalist control over labour processes, and thus a crucial feature of temporal alienation in capitalist societies, as I will discuss next chapter.

This brief examination of the transition period labelled 'agrarian capitalism' has thus helped identify basic features which are *specific* to capitalism. In particular, I have noted the specific economic form in which surplus is pumped out of the producers, the relentless drive of capitalism to increase the productivity of labour and to develop productive forces, the imposition of market imperatives on the social reproduction of both appropriating and producing classes, the process of dispossession of direct producers, and the signs of a passage of the control over production to the appropriating class.

*

There is no doubt that the transition between feudalism and capitalism entails a series of changes in conceptions and practices of social time. While clock-time unmistakably appears in various forms in English society during this period (see Glennie & Thrift, 2009), it does not become the *hegemonic* social time in 'agrarian capitalist' social time relations, which remain closer to a hybrid form of the concrete processual temporality of agricultural life, only superficially and slowly supplemented by forms and practices of clock-time. As the open field system and its concomitant legal encoding and social practices of the time of labour according to agrarian and seasonal cycles were brought to an end by processes of enclosures, clock-time did not fill the void in any sudden way whatsoever, and practices of concrete times were not subsumed under abstract time yet. Although abstract clock-time does not become socially hegemonic in the period of agrarian capitalism, it does spread and proliferate, for instance in the social spheres of science and technology, as well as in some other social practices (Glennie & Thrift, 2009). Let me look at this more closely.

D) The temporal infrastructure

Despite the theoretical differences which I will highlight in the next chapter between the present account and Paul Glennie and Nigel Thrift's *Shaping the Day* (2009), their empirical findings are extremely valuable. Indeed, their detailed and dedicated empirical research work brings to light fundamental historical evidence about the spread of clock-time in England in the period of agrarian capitalism. I can affirm, based on their work, that clock-time has spread, in towns *but also in rural settings*, throughout the transitional phase of agrarian capitalism in England, without yet rising to the hegemonic position in these specific social time relations. Indeed, clock-time is not merely an urban phenomenon in early modern England, but can also be found in rural settings (Glennie & Thrift, 2009, p. 176). Even before the Industrial Revolution, clocks were not only found in urban centers but also at 'the outer margins of anything we might call the English "urban system"' (Glennie & Thrift, 2009, p. 147). Thompson's research had led him to suggest that 'the majority of English parishes must have possessed church clocks by the end of the sixteenth century' (Thompson, 1993, p. 361). Although historical evidence for such a claim to be made for the period before the 1630s might be sparse, some 'very small places maintained church clocks over long periods', and this is the case 'for both "town" and "rural" parishes' (Glennie & Thrift, 2009, pp. 151, 157). Here we find that clock-time did exist, in the sense that churches in remote rural areas had clocks, however it is difficult to assess to what extent clock-time penetrated rural social life other than superficially.

Glennie and Thrift summarize their empirical findings inside the frame of what they call three interrelated 'Revolutions'. The first of these relates to how, in the fifteenth and sixteenth centuries, 'clock-times enter and pervade everyday life as mechanical clocks provide a critical impetus to standardized equal-hours timekeeping, first as a complement to, and then as a replacement for, various earlier and looser frameworks of daily temporality' (2009, p. 409). Crucially, though, as I will point out below, the qualitative difference between the *spread* of clock-times in everyday practices, and the *hegemony* of clock-time in capitalist social time relations should not be underestimated. Discussing the spread of public clocks in English towns from c.1400 to c.1600, Glennie

and Thrift do acknowledge that although the use of clock-time starts to enter social and individual narratives which locate events according to clock-time-units such as equal hours, 'large towns were too thinly distributed for clock-times to *yet* become pervasive of everyday life' (2009, p. 409, my emphasis). So, although historical record shows that clock-time does spread in the social field for that period, especially in towns – (since the evidence for rural regions are too sparse to make any generalization) – clock-time does not yet acquire a hegemonic character.

Glennie and Thrift's second revolution is located in the increased subdivision of hours into minutes and seconds, in other words, the spread and sophistication of clock-time-units, of clock time-frames. If in the 1550s a great amount of 'foraging behaviour' was required to 'find the time' to such levels of adequation, shortly before, during, and after the 'horological revolution' catalyzed in the invention and spread of the pendulum mechanism in the 17th century, finding and telling time to the minute or second became an easier task. What this shows is that the *sophistication* of an abstract clock-time system of social timing occurred *progressively* throughout the period between the late 16th century and the early 18th century.

The third 'revolution' is located in the development of specialized communities which centered on practices involving small and precise units of time. Glennie and Thrift often depict these communities, such as seafarers, clock-makers, astrologers and astronomers, and so on, as a sort of 'vanguard of clock-times' - their class, racial or gender position, however, is not taken into account. But crucially, what this highlights is that specific social groups increasingly make usage of clock-time and as such clock-time increasingly becomes itself a formal system in which some specific social practices are inscribed.

As such, in the process leading up to the Industrial Revolution, the *temporal infrastructure* of clock-time spreads out to a significant extent in the English social field, without yet penetrating social life in a systematic way.¹⁰⁷ What I mean here, based on

¹⁰⁷ E.P. Thompson might then have underestimated the spread of clock-time in the social field prior to the Industrial Revolution (1993). However, his fundamental insight, i.e. that capitalism revolutionizes social time, is still very much valid, as will become clear in chapter III.

Glennie and Thrift's empirical findings, is that throughout the period of agrarian capitalism and capitalist development in England, clock-time (1) spreads geographically, (2) undergoes a process of sophistication, and (3) increasingly becomes a formal system in which certain social practices are inscribed. The question then arises for chapter III: under what social circumstances and social time relations does clock-time acquire its *hegemonic* character?

*

The historical point to grasp here is simply that capitalism did not *create* clock-time. I had noted that the innovation of clocks and clock-time was embedded in pre-capitalist social-property relations. I add that throughout the transitional period of agrarian capitalism, clock-time spreads to the social field en route to forming a social *temporal infrastructure*. What the remainder of this dissertation, especially the next chapter, aims at providing, is an analysis of the historical fusion between clock-time and capitalist value formation, and its consequences for capitalist social time relations. What I am looking to theoretically address here, is the relationship between more fully fledged capitalist social-property relations and clock-time: I am looking to address the relationship between the empire of *value* (as a social concept) in capitalist societies and the 'empire of clock-time', to use Hassan's (2009) expression. However, capitalist *value* is hardly operative in the historical period of agrarian capitalism in England, and much less in the rest of Western Europe. Accordingly, although it is crucial to understand the agrarian origins of capitalism in order to identify its specificities as a social system, as a 'mode of production' to use a Marxist concept, it would be historically and theoretically hazardous to look for 'pure' capitalist temporal practices in agrarian capitalism *per se*, since those, as I will argue in the next chapter, are shaped by processes of value formation in fully fledged capitalist societies. What agrarian capitalism historically brings about is the qualitative transformation of capitalist social-property relations which will set the stage for the development of a historically specific social form of – capitalist - value formation. English society in this period concomitantly undergoes a process in which a clock-time infrastructure is formed. I will contend in what follows that it is under fully-

fledged capitalist social relations that clock-time will acquire its hegemonic status because of its fundamental relationship with processes of value formation in capitalist societies. Indeed, the recuperation of this clock-time infrastructure by capitalism, its subsumption to the extent that abstract clock-time-units become *embedded in the formation of social value*, constitutes 'the real Revolution of the clock'. Capitalism will universalize this temporal infrastructure and make it into the hegemonic form of time and temporality in capitalist societies.

England will form a privileged setting to enquire into, since it is the first capitalist country. Western European countries and the United States will also be integrated in my narrative at various times, since their capitalist development will lead to the spread of capitalism and clock-time to the globe. I acknowledge that the advent of capitalist social-property relations in every setting is specific. England's development is endogenous, while most of other countries develop capitalist social relations, as it were 'from above', either through state apparatuses under the geopolitical pressure of England, or through ruthless colonialism, imperialism, dependency or military pressure. The historical spread of capitalism, through geopolitical pressure, war, colonialism and imperialism, has tended to mean the spread of clock-time too (Adam, 2004, p. 136), all idiosyncrasies aside. As will become clear over the next chapters, clock-time has been culturally and socially embedded in idiosyncratic ways all over the world, different cultures have different attitudes to it, and the level to which clock-time has been integrated by people and societies varies. Capitalist social time as a 'struggling entity' comprising hegemonic abstract time in a relation of power towards various forms of concrete social times is a constant in capitalist societies, while the specific resulting social time relations, the degree of hierarchical relations between abstract and concrete times, the specific way in which times interpenetrate each other, etc. remains historically and socially specific.

E) Newton's time

Before turning to 'capitalist time', it is against this context of the emergence of capitalist social-property relations and the process of formation of a temporal infrastructure of clock-time in England that I would like to discuss Isaac Newton's theory of 'absolute time', which has arguably been the most influential conception of time ever produced. I base my reading on his idea of 'absolute time' as exposed in his *Principia* (Newton, 2010). In what follows, I do not posit that physics, or science, should be simplistically 'reduced' to a reflection of 'the social'. At the same time, although forms of knowledge do display endogenous forces and logics of development, they do not develop 'outside' society, or completely cut-off from the rest of human life. In this specific case of Newton's concept of time, I am merely pointing to the – non-deterministic, but unmistakable – relationship between his ideas and the material and temporal realities in which they were formulated.

The point here is to perform a historical reading of Newton's innovation, and to relate one of the greatest scientific minds of the Western world to his socio-historical context. Newton's powerful and influential conception of time, I suggest, expresses social changes brought about by the spread of clock-time and the emergence of agrarian capitalism, and even prefigures the development of capitalist social time relations. Part of Newton's prescient genius might be related to the fact that he is part of the specific social microcosm (learned community of physics and astronomy/astrology) in which clock-time is probably the most advanced in its embedment in conceptions and practices.

Moreover, his differential definition of 'absolute' and 'relative' time and the supremacy of the former over the latter can be read in relationship to the growing presence of abstract clock-time and as an insightful prefiguration of the direction that the relationship between abstract clock-time and concrete social times will take in Newton's context and beyond. Absolute time is here an *independent* variable with respect to which things move, i.e. change their positions in space (motion). Such a conception of time as an independent variable can be read against the background of the spread of abstract clock-time which itself produces time as an independent variable. In Newton's time more than in any other period before him, clock-time had become more precise than it had ever

been before. In technical terms, the 'invention'¹⁰⁸ by Huygens of the pendulum in 1656 had taken abstract clock-time to a whole new level of precision, and had radicalized its 'abstract', 'empty' and 'constant' character. It had also spread to the social field very rapidly: several parish Church clocks were displaying such mechanisms a mere 20 years after its first use (Glennie & Thrift, 2009, p. 161). The mathematical abstraction and the precision of post-pendulum clock-time divorced it even more from events and concrete socio-material temporalities (on the pendulum see Landes, 1983, pp. 116-119).

From a theoretical standpoint, Newton's development of the concept of absolute time is to be understood with regards to his attempts at defining 'true' motion. Indeed, Newtonian mechanics are first and foremost a discussion of 'laws of motion'. Newton's mathematical theory of motion evolves in a framework characterized by absolute space and absolute time. First, in terms of space, Newton posited that the only feasible analysis of 'true absolute' motion required reference to absolute places. Such absolute space required that Newton go against the views of Descartes and Leibniz, for whom 'empty space' was a conceptual inconsistency, or in other words, that space distinct from body could not exist. In fact, absolute space was not at all seen as an innovation in Newton's own time.¹⁰⁹ Most of the other participants in this period of the development of European physics saw it as a regression (Disalle, 2006, pp. 13-4). The reasons for this are theoretically complex, but one can say, following Penrose (2004), that Galileo's innovations and theories, especially the principle of relativity, had disproved the absoluteness of space, prior to Newton's interventions.

In order to grasp why Galileo had rejected absolute space, let us imagine a point in space, point *p*, and let us say for the sake of this example that point *p* is occupied by a given object: the London Bridge. In terms of spatial coordinates, we would identify its position at any given point in time. Given that the bridge hardly 'moves', we would, in terms of absolute space, consider that our point *p* is stationary. But even though the bridge is stationary, does it make any sense to say that it occupies the same point in space

¹⁰⁸ Huygens developed and corrected an idea put forward by Galileo a few years earlier. He was accused of plagiarizing in his time. See Landes (1983, p. 116).

¹⁰⁹ In what follows I rely on Penrose (2004).

from one point in time to the next? If one follows the principle of relativity, the answer is no, since Galileo has shown that dynamical laws are precisely the same when referring to any frame which is moving uniformly. The physics of stationarity are indistinguishable from the physics of uniform motion. In other words, there is no way of knowing whether the observed phenomenon occurs in a stationary frame, or in a uniformly moving one, since the dynamics of both frames are indistinguishable. To paraphrase Galileo's example: flies flying around on a moving ship fly indifferently to each and every side, the flies will not concentrate toward the stern, and will not produce any special effort in order to 'keep up' with the ship's speed. This blindness of the laws of physics to the distinction between stationarity and uniform motion is called the principle of relativity. It is this principle that makes it meaningless, dynamically speaking, to say that the London Bridge occupies the same point in space from one moment in time to the next.

In order to illustrate this further, let me use Roger Penrose's dizzying example (2004, pp. 386-7) and apply it to the spatial point occupied by the bridge. Paraphrasing him, we could start by considering the point p occupied by the bridge in light of the Earth's rotation, and note that the point in space p occupied by the bridge right now will be some 16 km away a minute from now. To push this logic, we could then take into account Earth's motion about the sun. If 'now' is a little after mid-day, the Bridge would then be 160 km off, but in the opposite direction, beyond Earth's atmosphere. Next, we could consider the sun's motion about the center of our galaxy, the motion of the galaxy itself within the local group, the motion of the local group about the center of the Virgo cluster, the motion of the Virgo cluster in relation to the vast Coma supercluster, and finally the motion of the Coma cluster towards the 'Great Attractor', the 'center of the universe'. The London Bridge, from this perspective, would have 'moved' quite a bit, to say the least. To the extent that, as Galileo has shown, there is no distinction in physical laws between stationarity and uniform motion, there is also 'no meaning to be attached to the notion that any particular point in space a minute from now is to be judged as the same point in space as the one that I have chosen' (Penrose, 2004, p. 387). In a Galilean

'relativistic' framework, absolute space has no meaning: space coordinates evaporate and reappear at every passing second.

This is why Newton's notion of absolute space was seen as a regression in his own time.¹¹⁰ Why then did he push it forward, as well as a notion of absolute time, especially given that Newton was himself, initially, a Galilean relativist? The answer from a purely logical point of view is that in order to make his dynamical laws work, Newton needed to postulate absolute space and time. It is thus seen, in the literature, mostly as a logical necessity.¹¹¹ Let me now turn back more specifically to Newton's conception of time.

In the *Scholium*, Newton distinguishes between two different times: relative time and absolute time. Relative time, on the one hand, is conceived of as relating to a sensible body, object, event. According to a relativist view, time is produced by the motion of objects, by changes in the world. Related as it is to objects and events, relative time is thus a dependent variable. Newton wants to distinguish this 'relative' time from the 'true', 'absolute', mathematical quantity: absolute time. Thus, absolute, true, and mathematical time flows equally *without relation* to anything external, and thus without reference to any change, object, event, or way of measuring of time (e.g., the hour, day, month, or year). In Newton's own words,

Absolute, true, and mathematical time, of itself, and from its own nature flows equably without regard to anything external, and by another name is called duration: relative, apparent, and common time, is some sensible and external (whether accurate or unequable) measure of duration by the means of motion, which is commonly used instead of true time; such as an hour, a day, a month, a year (Newton, 2010, p. 13).

Newton's reasoning followed from the recognition that in his quest for uniform mathematical quantities, those 'common' or 'vulgar' measures associated with relative

¹¹⁰ One interesting feature of the notion of absolute space in Newton's *Principia* is that it reveals its profoundly theological character. Not only was Newton a fervent deist, but God, in his mechanics, is the ultimate cause of motion. His notion of absolute space, by permitting empty space, was characterized by himself as the *sensorium* of God, as the following passage of his *Opticks* reveals, '...does it not appear from Phenomena that there is a Being incorporeal, living, intelligent, omnipresent, who in infinite Space, as it were his Sensory, sees the things themselves intimately, and thoroughly perceives them, and comprehends them wholly by their immediate presence to himself' (Newton, 2003, p. 370).

¹¹¹ The argument has been made numerous times in the literature that absolute time, notwithstanding if we see it as a metaphysical statement, a hypothesis or a working definition, was a necessity, either logical or practical, for the pursuit of empirical physics to 'work'. See for example DiSalle (2006), Penrose (2004, p. 388).

times were not adequate. For instance, the solar day, defined as the time-extension it takes for the sun to return to zenith, varies by as much as 20 minutes over the course of a year. Newton's argument is straightforward: since relative time is measured by a standard of motion (earth, sun, moon, sand, etc.), it can never be trusted to be absolutely uniform, since any motion can be retarded or accelerated by the appliance of an external force. Absolute time, in contrast to relative time predicated on motion, remains the same, it flows uniformly.¹¹²

The distinction here is thus between time as a 'true' quantity, an independent variable, and time as a relative 'vulgar' measure, a dependent variable. Although the categorization of Newton's conception of time as substantivalist might have its shortcomings, it is still helpful to make sense of 'absolute time' in the light of the substantivalist vs relational debate for the present purpose. On the one hand, relationalists, such as Leibniz, argue that time is a way to compare one event to another. Time is not independent of the material objects in the world: the material objects and their motion are precisely what define time. From a relationalist point of view, if there is no motion, there is no time. On the other hand, Newton posits the substantivalist idea of absolute time as independent of all motion: it is simply 'there', as a necessary structure of nature, an entity in its own right. Absolute time entails the existence of an entity distinct from the succession of particular events in which the events are located. The distinction between absolute and relative time is straightforwardly an ontological distinction. There is something 'outside of' or 'beyond' relative time that flows independently of any event.

Newton thus presented absolute time not only as a pure mathematical quantity but as *the true* quantity. One could say, following Husserl's famous diagnostic in his *The Crisis of the European Sciences*, that a purely methodological necessity has come to replace true being. Indeed, Newton's method here substitutes symbolic mathematical abstractions for intuitional concrete physical temporal realities. The mean through which the world is represented is mistaken for the world itself. We could thus apply Husserl's

¹¹² That time is distinct from any measure of it was already an idea that was propagated in Newton's epoch. Indeed, he must have read it as an undergraduate in Charleton's *Physiologia*, published in 1654, alongside many other ideas that would become central to his physics, see Rynasiewicz (1995).

general criticism to Newton's 'mathematicization' of physics in seeing that it also was a 'mathematicization' of the world,

Mathematics and mathematical science, as a garb of ideas, or the garb of symbols of the symbolic mathematical theories, encompasses everything which, for scientists and the educated generally, *represents* the life-world, *dresses it up* as "objectively actual and true" nature. It is through the garb of ideas that we take for *true being* what is actually a *method* (Husserl, 1970, p. 51, Husserl's emphasis).

Indeed, Husserl points the right way. In this sense, Newton's absolute time is an abstraction. Absolute time is not only put over and beyond any sensible body or phenomenon, but it is also, crucially, placed out of the reach of humans. Humans merely approximate absolute time, although when considering Huygens' pendulum, Newton found it a decent approximation of absolute time. With Newton, the 'absolutism' of abstract time is given a strong impulse. It is ascribed full authority, it answers to no 'relative' or 'common' notion of it, it is completely independent of events, objects and the environment. Moreover, it can't be changed, it can't be challenged, it is out of the reach of any human or social force. What Newton was doing here was to instate an absolute entity, a time independent of human timing practices and relative – or concrete - times. He was substituting an abstraction to the social being of time. He was installing a time the order of the parts of which is 'immutable', a time '*in*' which 'all things are placed' (Newton, 1995, pp. 15-16, my emphasis). The social basis of time is here deemed 'relative', whereas 'true' time is independent of humans, it is absolute, objective, 'natural'.

I propose that it is possible to read Newton's conception of time against the background of the transition to capitalism and the relative spread of clock-time in some conceptions and practices, especially in Newton's learned microcosm. Newton's theory indeed expresses this development and even prefigures absolute time as 'independent and uniform', thereby expressing the 'independent and uniform' form taken by abstract clock-time in capitalist social time relations. Social processes occurring at the moment and place where Newton's theory was formulated can be seen as a relevant background to it.

A similar argument in the case of Newton was made by historian of science Boris Hessen in a paper presented at the International Conference of science and technology in London in 1931. This paper had a strong impact at the time and was republished as recently as 2002 and 2009. Hessen, a non-dogmatic and anti-stalinist Marxist,¹¹³ and a victim of Stalin's purges in 1936, provides a historical materialist reading of Newton.¹¹⁴ Let me briefly present its main points.

Methodologically, what Hessen does is to relate the technical problems posed by the developments in the spheres of communication, industry and war, and the complex of problems and knowledge addressed by physics in this period. For example, the heightened construction of mines demanded refined notions of geometry and trigonometry, the development of firearms posed problems of physics related to the resistance of different materials, to the trajectory of projectiles, etc. Hessen's point is that technical tasks raise problems of physics and that the development of science should not be seen in total abstraction from social development.¹¹⁵ For this particular period, Hessen argues that the problems related with the socio-economic context are overwhelmingly problems of *mechanics*. He shows that the major problems of physics in this period, i.e. 1) the problem of simple machines, inclined planes and general problems of statics, 2) the free fall of bodies and the trajectory of a projectile, 3) the laws of hydro- and aerostatics, and atmospheric pressure, the pump, the motion of bodies through a resistant medium and

¹¹³ As the following passage reveals. 'According to the materialistic conception of history, the final determining factor in the historical process is the production and reproduction of actual life. But this does not mean that the economic factor is the *sole* determining factor. Marx and Engels severely criticized Barth precisely for such a primitive understanding of historical materialism'. This has the following consequences for analyzing the history of theories, 'It would, however, be a gross oversimplification to derive *every problem* studied by various physicists, and *every task* they solved, directly from economics and technology [...] The economic situation is the basis. But the development of theories and the individual work of a scientist are also affected by various superstructures, such as political forms of the class struggle and its results, the reflection of these battles in the minds of the participants—in political, juridical, and philosophical theories, religious beliefs and their subsequent development into dogmatic systems' (Hessen, 2009, pp. 21-22)

¹¹⁴ Another extremely insightful approach to these questions is to relate them to the work of Thomas S. Kuhn in his *Structure of Scientific Revolutions* (1996), especially his conception of scientific paradigms.

¹¹⁵ Scientists are historical creatures of this earth. Galileo begins his *Mathematical Demonstrations* by pointing out that the arsenal at Venice provides 'a wealth of material for scientific study'. Elias notes that too, 'One of the practical problems that interested Galileo was that of the functioning of weapons such as cannons' (Elias, 1992, p. 112).

4) the problems of celestial mechanics, the theory of tides, all correspond to a striking extent to the technical demands made by the development of industry, communications and war, namely 1) mining and building, 2) artillery and ballistics, 3) the drainage and ventilation of mines, the smelting of ore, canals and lock construction, intrinsic ballistics and designing the shape of ships and 4) navigation. For the Russian historian of science, it is beyond doubt that the topics and problems of physics thus seem to have been those placed on the agenda by what he calls 'the rising bourgeoisie'. For him, the dazzling flowering of natural science during the 16th and 17th centuries resulted from the disintegration of the feudal economy, the development of merchant capital, of international maritime relations and of heavy (mining and metallurgical) industry (for War). Hessen then spends time on Newton's theories *per se*, and shows how Newton's interests were precisely 'terrestrial', through his letters to friends and his career at the Royal Mint. The *Principia* itself can be read as a series of solutions to these problems. In Hessen's words, 'Despite the abstract mathematical character of exposition adopted in the *Principia*, not only was Newton by no means a learned scholastic divorced from life, but he firmly stood at the centre of the physical and technical problems and interests of his time' (Hessen, 2009, p. 17).

The technological and social problems raised by Hessen form no doubt part of Newton's context and can provide a historically informed lens to appreciate the great English thinker's contribution to Western science. In this sense, Newton's scientific mind is related to the socio-historical context of the emergence of capitalist social relations in the English countryside and the progressive marketization of social relations in England and in other parts of Europe. Newton (1643-1727), is living, thinking and writing in the social context of a rising English capitalism, and the rise of the social power of English capitalist 'improvers'. However, unlike Hessen, my argument here is a lot less grandiose. I am only interested here in the relationship between Newton's *conception of time* and the social conceptions and practices of time in his context. As such I suggest that with regards to time *per se*, Newton offers one of the clearer expressions of the rise of abstract clock-time as a social conception and practice of time. Clock-time, refined with the

sophistication of the pendulum and its spreading in this period to parts of English society, especially learned social microcosms such as the one in which Newton's scientific interventions occur, finds a cogent theoretical elaboration in Newton which counterposes it to 'vulgar' social times, thus prefiguring the trajectory which the struggle between abstract and concrete times in capitalism will take.

If one looks at Newton's context, then, one sees the emergence of social conceptions and practices of time which underlie his own theory of time. The rise of social practices predicated on and reproducing independent, abstract time, the formation of a clock-time temporal infrastructure, occurs historically in parallel to the emergence and progressive ascension to dominance of a social relation of wage-labour, of the emergence of a class of labourers forced to sell its labour-power as a commodity on the market, and the growing market dependence of both producers and appropriators.

F) Chapter conclusion

Before I analyze in more depth the interaction between capitalism and time in chapter III, I need to draw some conclusions about pre-capitalist social time relations in Europe, with regards to the conceptual architecture that was laid out in chapter I.

On the question of the alienation of time, there were instances in feudal societies in which the time of labouring practices could appear as having been, to some extent, alienated. For instance, there is an extent to which one could argue that the labour performed by monks in monasteries, which formed religious, but also labouring, enterprises, was alienated time. The social time relations presiding over such a process, though, in that instance, were of a different kind. The appropriator was the community, in the form of the monasteries themselves, or the Church in general. In this sense we can say that the time of labouring practices of monks belonged to the 'community', and appeared to the agents as God's time. But what is important to point out here, is that the time of labour *per se* is not alienated in this context. Although work is performed alongside a temporal order characterized by time-discipline, there is no fusion between appropriation

and time: surplus transfer from producers to appropriators is not predicated on abstract time measures. As such, it appears temporal domination does not necessarily entail temporal alienation in this context. The same could be said of the legal codification of the time of labours by manorial courts in the open field system.

A second example we have encountered, when discussing the birth place and time of clocks and clock-time, is the labouring practices of medieval wage-labourers in European urban manufacturing centers. What Le Goff has called the 'new time', was dominated time, as we have seen from the fact that this time was regulated in order to be subjected to the realm of commercial non-capitalist practices. It is no accident that the first social usages of clocks were made in a labouring context. In fact, to use Thompson's words, the employment of 'actual hands' in productive practices marks a crucial leap in the emergence of the temporal alienation of labouring practices. But crucially in the pre-capitalist context, the labour process itself is not under the control of employers and appropriators. Workers and producers remain masters of the concrete times involved in their labouring activities. Although the timing of the duration of work by clock-time entails a particularly strong and brutal form of temporal *domination*, temporal *alienation* is not systematically or completely occurring. The mitigated aspect here rests on the fact that abstract clock-time-units envelop and *dominate* the duration of labour, but do not *alienate* the concrete times of the labour process. This should be kept in mind in chapter III, when I address the question of universalization of the commodification of labour-power, and the corresponding rise of alienated clock-time as the dominant form of temporality in capitalist societies.

To use Le Goff's categories once again; Church time and merchant time did then display characteristics of temporal domination. These modes of temporality tended to construct an 'official' time as something that did not directly belong to labouring or devout people, whether time was conceived of and practiced as belonging to God, to employers, or to the logic of commercial markets. However, this form of temporal domination did not penetrate and alienate the very fabric of concrete temporalities involved in social reproductive practices. So, we do see in feudal societies that people

were subjected to temporal domination, but we can't speak of truly fully-fledged temporal alienation as a fundamental feature of these societies. The enquiry into popular cultural forms of temporality and into the time of the bulk of European feudal labouring practices has shown that popular times and the times of labour on the land were not alienated.

It might be tempting here to argue that the time of labouring practices was alienated in feudal social time relations since labour was alienated, but that would amount to taking a shortcut that I would like to avoid. For instance, it might be argued that the time 'spent' labouring for the lord was alienated time. From that perspective, the 'time' dedicated to the production of the surplus that would be appropriated, or for that matter practices such as the *corvées*, might be seen as instances of alienated time in feudal social time relations. This, however, would amount to projecting back on feudal social labour the measuring rods of industrial capitalist labour. Indeed, 'labour' and 'time' are not fused in pre-capitalist societies in the same way that they are in capitalism. The 'time' we would measure feudal labour with is rather a form of alienated time belonging to capitalist social-property relations. Capitalist value, with its corresponding labour-time as a formative unit, did not prevail in pre-capitalist societies. Accordingly, it would be anachronistic to consider feudal social time relations in the light of capitalist social time relations.

I suggest therefore that the time of the peasants and popular masses, 'processual concrete time', was not alienated time. Although there is no doubt that *labour* was alienated, it is not at all clear that the *time* of labouring practices was. On the one hand, pre-capitalist labouring practices were not emptied of social interaction, of what is called today 'leisure-time', with concrete contents of community, family and friendly interactions and activities and processes of procreation, sleep, rest, etc. On the other hand, and relatedly, the labour process itself was not controlled by the appropriators. Having access to their means of production, the peasants of medieval Europe were not exploited by purely 'economic' means, but rather by an apparatus of military, political, legal or religious means. The appropriation occurred, so to speak, *after* the fact, *after* the actual production of the surplus. The *moment* of appropriation did not correspond to the *moment*

of production, appropriation was not 'purely economic' as it would tend to become under capitalism. The actual production process, and the time of the labouring practices itself remained, to a significant degree, a peasant, or craftsman's matter (Hilton, 1985b; Rifkin, 1987, pp. 104-5). The labour process was predicated along the lines of a concrete time of tasks and of socially mediated processes of nature, as expressed, for example, in the cultural forms of grotesque realism. This does not mean that labour itself was not alienated: it was. But labour and alienated time were not *fused*, as they were about to become under capitalism.

One good way to illustrate the difference between feudal time and capitalist time is to take into consideration the time of the transitional phase: agrarian capitalism. Agrarian capitalism, as a transitional phase between feudalism and capitalism, did not respond to the same temporality criteria as industrial capitalism, a fully-fledged form of capitalism,¹¹⁶ as we will see in the next chapter. Agrarian capitalism's temporality responded and functioned in a way which was still very much closer to the socially mediated processes of nature, to processual concrete time.¹¹⁷ The key difference that was introduced by agrarian capitalism was the 'freeing' of the worker from her/his means of reproduction, forcing her/him to sell her/his labour-power on a labour market, and the fact that tenant farmers took more and more control over production. Such processes did emerge in agrarian capitalism, and would later become the prominent way in which social labour would be structured under industrial capitalism (more on that in chapter III). This

¹¹⁶ Although we should note, in the ideology of 'improvement' which is a social product of agrarian capitalism, that the idea of 'productivity', of getting more output in less time and space, is already at work, prefiguring the ideology of making labour more 'productive' which is tied to temporal alienation under capitalism.

¹¹⁷ When I say that, I do not mean to reproduce the distinction between an 'archaic' relationship to time in pre-capitalist societies which would be more 'natural' than modern or capitalist time. The relationship to time of some 'archaic cultures' were, on many levels, richer, more complex and sophisticated than the capitalist one. I use the expression 'socially mediated processes of nature' in order to show that the relationship to nature is always socially mediated, and also to point out that a tuning to seasons does not mean a less sophisticated relationship to time than the social suppression of seasonal temporality by social practices such as heating, air conditioning, genetic engineering of plants, and so on. 'Closer to the socially mediated processes of nature', here, then, simply means that the seasonal cycles are socially relevant to labouring practices, not that the relationship to time in the agrarian capitalist social setting was less sophisticated, or temporally profound. The temporal practices involved in agriculture are not 'natural', rather 'agriculture' as we know it is the results of thousands of years of social practices of domestication, breeding, and continuous and discontinuous sophistications of agrarian practices.

change in social relations would open the door for a more and more direct control of the labour process by the class of appropriators, which would culminate in industrial capitalism, lest we only mention capitalist forms of labour process control such as Fordism or Taylorism, the latter which I will discuss in the next chapter. The alienation and reification of temporalities would then unfold with industrialization, as capitalist value (as a social concept), mechanization, the technical division of labour, labour management and discipline by employers, and the production of surplus-value, would become the driving forces of capitalist society. To make my hypothesis clear: while agrarian capitalism is the transitional phase between feudal and capitalist social relations, the spread of clock-time in medieval and early modern Europe, and more specifically in England, is the transitional phase which will lead to the fusion between alienated labour and abstract time, it is the transitional phase in which the temporal infrastructure of alienated capitalist time is laid down. When capitalist social relations will become *dominant*, capitalist value will take hold of this temporal infrastructure of clock-time.

In the next chapter, I will evaluate the hypothesis that capitalist social relations tend to systematically alienate time, by universalizing a form of social value which fuses together human labour and abstract clock-time. After this analysis, I will continue exploring the question of temporal alienation in chapter IV by looking at cultural mediations of capitalist temporal alienation.

Chapter III: Capitalist Social Time Relations

- A) Clock-time.
- B) The temporal consequences of capitalist value formation, or the theoretical relationship between capitalist value and clock-time.
- C) Labour-market, capitalist industrialization and clock-time.
- D) World Standard Time.
- E) Temporal Alienation and Reification.
- F) The temporal form of domination and resistance: The dialectics between abstract and concrete time in capitalist social time relations.
- G) Addressing alternatives.

A) Clock-time

The last chapter delved into the question of the socio-historical origins of clock-time, and of the socio-historical origins of capitalism. It was argued, in contrast with accounts of clock-time that de-socialize and/or de-historicize it, that clock-time *is* a form of social time which originates from specific socio-historical settings and practices related to medieval commodity production and pre-capitalist wage-labouring practices. The origins of capitalism, for their part, are to be found in the transition period of agrarian capitalism in early modern England. In the case of England, the process of transition from feudalism to capitalism occurs in parallel to the laying down of a temporal infrastructure of clock-time.

This chapter examines historically and theoretically the relationship between capitalist social relations and clock-time. The link between capitalism and clock-time is often discussed in the literature, but also often misunderstood or simplified. Adam, for example, discusses this point in terms of capitalism's 'dependence' on clock-time,

Despite their diversity, all industrial time practices depend on time first being created to human design, that is, as abstract decontextualized and quantifiable clock time. Built on the foundations of clock-time a time economy could flourish and the connection between time and money be established. Time could become commodified, compressed and controlled. These economic practices could then be globalised and imposed as the norm the world over (Adam, 2004, p. 73).

Although Adam notes the commodification of time under capitalism (which she seems to conflate with 'industry'), she fails to locate it in the very process of value formation, in

the historical and theoretical relationship between clock-time and capitalist social value that will link labour and abstract clock-time in such an inextricable way.

As Postone has put it, 'the "progress" of abstract time as a dominant form of time is closely tied to the "progress" of capitalism as a form of life' (1993, p. 213). While I situated the origins of clock-time in social practices which were inscribed in pre-capitalist social time relations, but were to become the basis of processes in the transition period of agrarian capitalism in England and that would later, under a qualitatively different form, come to be dominant and universalized in capitalism as a social system, I will now turn my attention to the very specific historical and theoretical fusion between clock-time (Postone's 'abstract time') and capitalist social relations. I argue that capitalist social practices of value formation display a strong tendency to alienate and subsume the temporality of social material and human (re)productive practices under one hegemonic form, abstract clock-time, and that this tendency has been accompanied by the temporal alienation of a number of practices other than the labour process itself, to varying degrees. As a result, capitalist social time relations display a tendency to alienate and reify time. I will thus explore the time of the capitalist labour process, and I will also use examples to show the tendency of capitalist abstract clock-time to alienate and subsume the temporalities of other social practices.

I specify that capitalism's drive to alienate concrete times is a process entailing a logic of power and resistance, and as such is a contested process. Capitalism thrives to impose abstract clock-time on the concrete temporalities of human practical activities and social conceptions of time, as it thrives to 'value' them. It succeeds to varying degrees, but never completely. At the center of this socio-historical phenomenon we find that time in capitalist societies is alienated in a specific way. The alienation of time in capitalist societies rests on the alienation of labour-time, and is expressed in the alienation characteristic of capitalist social time relations *per se*, as clock-time – and capitalist social relations - have been systematized and globalized. The hegemony of clock-time over conceptions and practices of time has made it the dominant form of social time not only in the West, but also, through colonialism and imperialism, in other parts of the world,

'time has been a most effective colonizing tool' (Adam, 2004, pp. 136-137).¹¹⁸ The 'empire of capital' (E. Wood, 2005) has been supplemented by an 'empire of clock-time' (Hassan, 2009). Under such an empire, domination and resistance, as I will illustrate, can be seen as a temporal struggle between concrete and abstract time.

The narrative of the time-discipline involved in industrial capitalism has been mobilized numerous times already by insightful writers (for example Thompson, 1993; Rifkin, 1987). The consequences of clock-time in terms of 'time-discipline' *per se* have been the object of insightful research, but contrastingly there have not been many attempts to shed historical *and theoretical* light on the relationship between capitalism and clock-time (with the notable exception of Postone, 1993). This chapter will focus less on the disciplinary character of clock-time in factory and social life –although I will never lose sight of this central issue - and instead turn the theoretical light to the *specific relationship* between capitalism and clock-time at the level of capitalist processes of social valuation, and to the rise to hegemony of a specific form of social time which will come to dominate the multiple times which make up the social temporal fabric.

In order to go forward with these discussions, I first have to refine what I mean by 'clock-time' *in the capitalist context*. As seen in the preceding chapter, clock-time is not a 'creation' of capitalism *per se* - although it is intimately related to certain pre-capitalist wage-labouring practices and medieval commodity production. Following Glennie and Thrift's empirical research, I have argued that a temporal infrastructure of clock-time seems to have been spreading relatively in England concomitantly to the transition from feudalism to capitalism, but before the fully fledged development of capitalist value formation which would occur in relation to the development of industrial capitalism, clock-time spread to the social field *without* being socially hegemonic. Thus, the socio-historical process under enquiry here concerns the subsumption of the temporal

¹¹⁸ While many contributions in the literature treat the imposition of clock-time on non-Western societies as a result of colonialism and imperialism, there are specificities and idiosyncrasies in these general processes that should not be overlooked. The best example of such specificities is the case of Japan under the Meiji government, which 'adopts' clock-time without being subject to direct colonial rule, and while feeling the pressures of imperialism in a different way than other non-Western countries. See Nishimoto (1997, pp. 237-259).

infrastructure of clock-time under capitalist social relations which has made clock-time the *hegemonic* time-form in capitalist social time relations.

Although 'clock-time' refers predominantly to the abstract sequence of constant, equal and 'empty' time-units such as equal hours, minutes and seconds, its social efficiency and meaning is refined in contemporary societies by its interlocking with the Gregorian calendar and the Christian era. 'Clock-time' will thus be understood in what follows not only as 'the-time-of-mechanical-clocks', but as a cluster of complementary time-reckoning systems including the Christian era, the Gregorian calendar and the further division of the day into hours, minutes, seconds, and fractions of a second. The process under scrutiny here is the progressive amalgamation of the Christian era and Gregorian calendar with 'clock-time'. This is a socio-historical process whose relationship to capitalist social relations must be examined.

Some readers might find problematic the clustering of the Christian era, the Gregorian calendar and clock-time into one concept of 'clock-time'. I will comment on this issue as follows. First, the Christian era itself can be seen critically as an imposition of Western-oriented historical narratives on other parts of the world. 'Era' is a social form. The very notion of an 'era' involves a fixed starting time-point, and it seems likely that this form of time-reckoning was a product of the advent of writing. As Jack Goody points out, concepts such as 'century' and 'millennium' are products of literate cultures, and the numeral reckoning of the passing of the years seems to have been absent in oral cultures (2006, p. 14). In contemporary capitalist societies, the Christian era is used in synchronization with clock-time.

Second, calendar time-reckoning has always been intimately linked with the regulation of socio-economic life by states, churches or dominant classes, as well as with the conflict over the social meaning of time which propels any form of social time relations. Calendar time-sequences and units are a product of social interaction and conflict, and more often than not represent dominant groups' concepts and practices of

time which are used to coordinate social practices.¹¹⁹ As touched upon in chapter I and II, the month, the year and the week, to take the most prominent concepts and practices of calendar time, are more or less arbitrary social constructions (Goody, 2006; Elias, 1992). I have already commented on the units 'day' and 'second' in chapter II. Here, Goody provides a similar argument for the 'month', the 'week' and the 'year'. It is worth quoting him at length, since he summarizes neatly a crucial and important point,

The year itself is a partly arbitrary division. We [people in the West JM] use sidereal cycle, others a sequence of twelve lunar periods. It is a choice of a more or less conventional kind. In both systems, the beginning of the year, that is, the New Year, is quite arbitrary. There is, in fact, nothing more "logical" about the sidereal year which Europeans use than about the lunar reckoning of Islamic and Buddhist countries. It is the same with the European division into months. The choice is between arbitrary years or arbitrary months. Our months have little to do with the moon, indeed the lunar months of Islam are definitely more "logical". There is a problem for every calendrical system of integrating star or seasonal years within lunar months. In Islam the year is adjusted to the months; in Christianity the reverse holds. In oral cultures both the seasonal count and the moon count can operate independently, but writing forces a kind of compromise. The week of seven days is the most arbitrary of all. In Africa one finds the equivalent of a "week" of three, four, five or six days, with markets to correspond. In China it was ten. (Goody, 2006, p. 15)

These forms of time-reckoning based on varying concepts and practices of 'day', 'week', 'month' and 'year' are a common feature of literate societies, in each of which specific dynamics produce specific calendars. In contemporary capitalist societies, the Gregorian calendar (introduced by Pope Gregory XIII in 1582) is now used in synchronization with clock-time.

One of the most influential writers on this topic, Eviatar Zerubavel, analyzes the relationship between the Christian era, the Gregorian calendar and clock-time as a series of 'refinements' brought about by a social need of coordination,

Compared with the Christian Era, the Gregorian calendar is a rather practical time-reckoning and dating framework, since it is sensitive to time intervals such as the month and the day, which the former is not. Yet for everyday temporal coordination in the modern world it is simply not sufficient. Social life as we know it would probably be impossible were we to rely entirely on time-units at least one day long when temporally

¹¹⁹ For accounts of calendar-time from a sociological perspective: (Adam 2004, pp. 103-112; Elias, 1992, pp. 193-200; Zerubavel, 1981, 1985; Rifkin, 1987, ch.4). A very useful and detailed introductory summary is provided by Falk (2008, pp. 30-5). Here, a promising field of enquiry would look at the relationship between systematic agricultural surplus and calendar time-forms.

coordinating ourselves with others. Making an appointment for "February 16" is definitely more practical than making it for "1982," but it is still not sufficient. The indispensability of a standard temporal reference framework such as clock time, which involves such time-units as the hour, the minute, and the second, ought to be appreciated within this context. It is far more convenient to coordinate ourselves temporally with others through clock-time formulations such as "at 4:55 P.M." than through calendar-time formulations such as "on April 27" alone (Zerubavel, 1982, pp. 4-5).

While Zerubavel seems to privilege a 'cunning of rationality' thesis in order to make sense of the historical refinement of time-reckoning conceptions and practices, it would seem to me rather ill advised to *not* enquire into the clustering of era time and calendar time with the minutes, hours and seconds of clock-time in the light of the changing nature of social value brought about by the advent of capitalist social relations. As under capitalist social relations, relations between humans appear as relations between things, 'coordination' through clock-time might very well represent not only a form of coordination between people, but also between commodities, and between social practices of formation of capitalist value. As this chapter will emphasize, while in non-capitalist society the formation of social wealth did not directly depend on a precise calculation of the *temporal duration of expenditure of human labour*, in capitalist societies time-measurement of labouring practices in terms of abstract time-units becomes ingrained in the very processes of value formation. As such, once processes of labour and a social average of necessary labour-time come to be formative of, and measurements of, social value as such, it should not come as a surprise to see 'universal', socially constructed divisions of the day and refinement of time-units.¹²⁰

A conceptual refinement for the purpose of the remainder of this dissertation is thus needed. Throughout what follows, I will mostly use 'abstract time' to designate the particular time-form of the mechanical time of the clocks, and 'clock-time' not only to designate the particular 'time of mechanical clocks', but more broadly the specific supplementation of era-time and calendar-time with the time of the clocks. The former

¹²⁰ Let me be clear here once again: there is a qualitative difference between on the one hand the existence of such units, for instance in the practice of astronomers, and the social dominance of these units for the bulk of social life. Some learned communities, or social microcosms, can develop highly complex, or idiosyncratic conceptions of time, but this does not automatically result in these conceptions dominating social reproductive practice in general, or becoming socially hegemonic.

refers to the formal properties of clock-time, the latter to its socially systematized character. Let me look at this process more closely. First, I will shed light on the relationship between clock-time and capitalist value. Second, I will read the emergence of World Standard Time as a product of the capitalist organization of social time. Third, I will discuss the alienation of time in capitalist societies as well as the phenomenon of the reification of time. Fourth, I will then go on to analyze some temporal characteristics of domination and resistance under capitalism, and fifth I will end the chapter by critically engaging with some influential contributions to the literature on social time, mostly with Paul Glennie and Nigel Thrift's *Shaping the Day* (2009).

B) The temporal consequences of capitalist value formation, or the theoretical relationship between capitalist value and clock-time.

In his analysis of the commodity at the very start of *Capital*, Marx discusses its dual character. He distinguishes between the use-value and the exchange-value of a commodity, which in turn reveals the dual character of labour in capitalism: concrete and abstract labour (Marx, 1976). Following the path opened by Moishe Postone (1993), I would like here to integrate in this narrative the dual character of *time* in capitalism, or more precisely the relationship in capitalism between 'abstract' and 'concrete' time. Postone uses the categories of abstract and concrete time in an insightful way, and some of what follows will build on this theoretical basis. His distinction between abstract and concrete time rests on their definition as respectively independent and dependent variables. 'Abstract time' for Postone is thus 'uniform, continuous, homogenous, "empty" time, [and] is independent of events', while concrete times are 'functions of events: they are referred to and understood through natural cycles and the periodicities of human life as well as particular tasks or processes...' (Postone, 1993, pp. 202-201). I shall use the terms 'abstract' and 'concrete' time in a similar way, and add some precisions along the way.

Postone's profoundly insightful thesis suggests that capitalist time is characterized by a dynamic of 'transformation/reconstitution'. By that he means that the concrete time

of use-value practices, re-termed 'historical time', presides over the historical movement of capitalist societies through the amassment of wealth, while the framework of value, predicated on abstract time, reconstitutes the very social relations which are formative of value, 're-present-ing', in a way, capitalism's abstract logic (Postone, 1993, pp. 294-387, more on that below). Throughout my discussion I will refer to points made by Postone, but I will distance myself from many of his propositions following McNally's critique of *Time, Labor and Social Domination* (McNally, 2004b). I will seek to highlight the processes of alienation, reification, domination and resistance at work between abstract and concrete time under capitalism and to point to the historically specific characteristics of capitalist social time relations.

As Marx explains in *Capital*, the use-value of a commodity is its quality as an item that can satisfy a human need, understood broadly; hunger, intellectual curiosity, creative expression, clothing, the need for shelter, for tools, 'the nature of these needs, whether they arise from the stomach, or the imagination, makes no difference' (1976, p. 125). Use-value, which can be consumed either as a means of subsistence or as a means of production, is a product of the interaction between 'useful' human labour and nature. Useful, or 'concrete', human labour is thus labour considered from the point of view of the process that shapes and configures the natural properties of an item in order to make it satisfy a human need: the concept of concrete labour cuts through the very human/nature metabolism. As producer of use-value, human labour is here concrete human labour. This concrete labour is an activity which is 'determined by its aim, mode of operation, object, means and result' (Marx, 1976, p. 132). Labour in this sense, as useful labour, 'is a condition of human existence which is independent of all forms of society; it is an eternal natural necessity which mediates the metabolism between man and nature, and therefore human life itself' (Marx, 1976, p. 133).

To this I add that concrete labour also entails a specific, concrete *time*. What I mean by that is that every act of concrete labour embeds particular concrete temporalities, tempos, time patterns; it also involves specific concrete activities of timing, and entails specific concrete series of temporal sequences. Acts of concrete labour, as producers of

use-value, entail and produce a *concrete time*. Tailoring, to take one of Marx's examples, implies a series of tasks, motion, rhythms and (dis)continuities which establishes temporal relations in a concrete way: the stop-and-go movement of the hand holding the needle, the folding and unfolding of the fabric, the cutting of the edges, etc., establish temporal relations between the process of human labour and the temporal material reality, producing concrete time-frames, tempos, sequences, etc., based on the unfolding of the activity itself. The concrete time of tailoring is not the same concrete time as, say, baking a pie, writing a book, sowing the land, mining, riding a boat, teaching music, or building a spaceship.

Concrete time is not to be understood narrowly as 'the-concrete-time-of-labour'. Concrete time is more broadly a fundamental condition of human life: socially mediated natural and biological cycles which maintain and reproduce concrete human bodies such as digestion, sleep, pregnancy and childbirth, breathing, seasons, birth and death, sickness, sex, all entail and produce concrete times. Diverse temporal processes and cycles embedded in matter, in natural objects and human bodies, whether they are actual processes underpinning the reproduction of reality, or folded temporalities (processes which have now come to an end but remain in existence, 'folded' inside a socio-natural or human material reality)¹²¹ come together in this metabolic relationship between humans and nature, constituting concrete times, blurring any attempt at establishing a distinction between 'humans' and 'nature'. Material reality in itself being a temporal reality, humans and nature are 'temporally embedded' in one another. This temporal relation, through the constitution of social organizations of human practical activities, is also mediated by forms of social time relations.

Concrete time as I understand it here is thus both a result and a condition of the encounter between human bodies and practices, and temporal socio-natural material realities.¹²² It is time as (re)produced by the combinations and ruptures of these processes

¹²¹ This expression is also used by Latour and Serres, but with a different meaning focusing on the a-simultaneity of the genesis of objects. See Serres and Latour (1995).

¹²² Humans themselves are temporal socio-natural material realities. My ontology suggests one reality: a temporal socio-natural material world, time here being understood as the very fabric of human and socio-natural 'matter'.

of interaction between humans and their world. It is a product of concrete processes, and as such it is a function of these processes.

Back to Marx's analysis of the commodity in *Capital* one finds that, on the other hand, commodities, under capitalism, are also the 'material bearers of...exchange-value' (1976, p. 126). The exchange-value of a commodity is formed by the exchange *relation* of two or more commodities. It appears at first as a 'quantitative relation, the proportion, in which use-values of one kind exchange for use-values of another kind' (Marx, 1976, p. 126). Commodities with qualitatively different use-values are exchanged quantitatively on the market in given proportions. These proportionate relations vary from one socio-historical context to the other. As Marx explains, the fact that two commodities which from the perspective of their use-values are not commensurable can still be exchanged necessitates that they share something in common, a third term, something which makes them *commensurable*. Interestingly, in order to illustrate such commensurability, Marx gives a 'spatio-geometrical' example,

In order to determine and compare the areas of all rectilinear figures we split them up into triangles. Then the triangle itself is reduced to an expression totally different from its visible shape: half the product of the base and the altitude. In the same way, exchange values of commodities must be reduced to a common element, of which they represent a greater or lesser quantity (1976, p. 127).

Marx calls this third term through which commodities are commensurable 'value', 'the common factor in the exchange-relation, or in the exchange-value of the commodity is therefore its value' (1976, p. 128). In this case, in their being put in contact through a third term, the commodities are *abstracted* from their physical properties, from their use-value, 'the exchange relation of commodities is characterized precisely by its abstraction from their use-values' (Marx, 1976, p. 127). This means that the actual process of exchange abstracts from the concrete physical properties of the commodity as a material embodiment of human useful labour which can satisfy a human need. Parallel to this process of abstraction is a process of reduction. Commodities are reduced to the bareness of what they ultimately share in common: what counts is strictly the proportion in which they embody this third term, value.

Value is thus to be investigated in the form of what is common to all commodities: the fact that they embody – are material bearers of – human labour. Marx's labour theory of value posits that the value of a commodity in capitalism is given by the fact that *abstract* human labour is congealed in it, 'A use-value, or useful article, therefore, has value only because abstract human labour is objectified [*vergegenständlicht*] or materialized in it' (1976, p. 129). It is here that Marx points out the other side of the dual character of labour in capitalist societies, 'human labour pure and simple', the very expenditure of human labour in general, or, in Marx's conceptual terms, *abstract labour* in the form of *labour-power*.

The commensurability of commodities in exchange also means that the embodied labour which they contain is commensurable. Seen from the perspective of capitalist commodity exchange, human labour is reduced to labour-power,¹²³ and expressed in value, 'in so far as it finds its expression in value, it [labour JM] no longer possesses the same characteristics as when it is the creator of use-values' (1976, p. 132). Abstract labour, in capitalist societies, 'a world of commodity production, in which all goods are produced for exchange on the market' (Harvey, 2006, p. 9), thus gives commodities their value.

Crucially, the value of a commodity refers to a *quantity* of human abstract labour congealed in it. By definition, a quantity must be measurable, but how to measure such a quantity of abstract labour? The amount of labour-power congealed in a commodity is measured through *abstract time-units* with respect to labour expenditure (and socially necessary labour-time, more on that below). In this case, time-units become quanta expressions of measurement of the duration of labour-power's expenditure. Labour-power, in other words, is expended as '*labour-time*', i.e. the duration of the time-extension during which the use-value of labour-power is consumed (by its buyer). Such a process of measuring the quantity of labour-power congealed in commodities, which is at the very basis of the formation of value in capitalist societies, is thus fundamentally

¹²³ The 'reduction' of labour to labour-power is also a process of 'abstraction from their inequalities'. See the following passage from Marx 'The equalization of the most different kinds of labour can be the result of an abstraction from their inequalities, or of reducing them to their common denominator, viz., expenditure of human labour in the abstract' (Marx, quoted in Harvey, 2006, p. 16).

related, inseparable from, the existence of abstract time-units to which labour-time can refer in a socially valid way. Such abstract time-units which are theoretically and historically ingrained in capitalist value formation, have historically been found in the temporal infrastructure of (socially constituted) abstract time.

The process through which different concrete times of labour are 'commensurated' thus entails the expression of the duration of labour-power's expenditure in terms of abstract, constant, units of time. In the same way that capitalist processes of value formation and exchange put in common use-values that have otherwise nothing in common by abstracting from their physical properties and reducing them to a third term; value, they also put in common concrete temporal relations that are otherwise incommensurable with each other by abstracting from their concrete properties and by reducing them to a third term, abstract time, which in this case is a constant sequence made of the succession of equalized durational time-units. Accordingly, the formation of value in capitalist societies implies not only an abstraction from the physical properties of an object, but also from the concrete temporal relations of a process, which become expressed into a third, abstract, standard.

Just as in Marx's triangle example, both abstract time and capitalist value are processes of commensurability through abstraction and reduction. As such, abstract time is literally capitalist time.¹²⁴ Indeed, abstract time occupies the same position with regard to concrete social time as, in capitalist societies, value with regard to use-value, and abstract labour with regard to useful labour. From the fact that the different concrete labours, producing different use-values, are commensurated through their conversion into abstract labour, it follows that in this same movement of abstraction and reduction, the different concrete times of different concrete labours are abstracted, reduced to abstract time, and commensurated through their expression in clock-time-units. The abstraction of use-value is thus, in this process, concomitant to the abstraction of concrete labour, and to the abstraction of the manifold concrete times of concrete labours. This shows that the

¹²⁴ Or, put differently, the only temporal form that corresponds to capitalist value relations is abstract time.

process of abstraction and reduction at work in capitalism is not only the abstraction from concrete human labour, but also the abstraction from concrete time.

Crucially, it is important to note, against some tendencies in Postone's argument, that although abstract time is hegemonic in capitalist societies, this does not mean that concrete times cease to exist, or are absolutely subsumed under abstract time. Capitalism strives to alienate, abstract and reduce concrete times, but it also depends on them for its reproduction. I will thus speak of the hegemonic *tendencies* of abstract time in capitalism as entailing a logic of power, of conflict. This important point should be kept in mind as I continue this discussion.

What precedes leads to the following propositions concerning the metabolic relationship between humans and socially-mediated nature in capitalism:

- 1) Concrete labour produces use-value via concrete time.
- 2) Abstract labour produces value via abstract time.

I then want to turn to the conditions which make possible the passage from 1 to 2. These conditions, I argue, are social and historical. They are A) the formation of a full-fledged labour market and B) the existence of a *socially valid* system of time-reckoning comprising abstract time-units, which I have enquired about in chapter II. In exploring these issues, I need to address how labour under capitalism is both useful and abstract at the same time, such that the struggle between capital and labour might be reframed as a struggle between the abstract time of capitalist value formation and the concrete times of human and social life.

Let me start with the latter (B). The existence of a *socially valid* system of time-reckoning resting on abstract time-units is an essential condition for the passage of (1) to (2) because of a further aspect of labour-time and value formation in capitalist societies which is crucial to my point here. The value of a commodity, indeed, is expressed through a further process of averaging out: the amount of labour-time formative of the commodity's value is not the amount of labour-time spent by the particular worker who

has produced this particular commodity.¹²⁵ Rather, value comes from the average labour-time, by social standards, required to produce the commodity: the ‘socially necessary labour-time’ required for its production. As Marx puts it, ‘Socially necessary labour-time is the labour-time required to produce any use-value under the conditions of production normal for a given society and with the average degree of skill and intensity of labour prevalent in that society’ (1976, p. 129). In the exchange relation, the socially necessary labour-time for the production of commodity *x* is compared to the socially necessary labour-time required to produce commodity *y*. In terms of value, whereas abstract-labour is the substance of value, its magnitude refers to the quantity of labour-time understood in this social way, in which society as a whole is the point of reference.¹²⁶

Crucially, this points out the fact not only that abstract time-units must be in existence in order for capitalist value to be formed at all, but furthermore that such abstract time-units must also be *socialized*, they must be socially objective, socially *valid*. This form of abstract time has to be spread to encompass capitalist society in order to accompany value formation, synchronize and coordinate production, exchange and consumption, and so on. It is only when capitalist social relations become socially hegemonic that socially necessary labour-time acquires the social and historical meaning that the labour theory of value ascribes to it, that it becomes ‘the standard of value’ (Harvey, 2006, p. 35). As such, both historically and theoretically, the rise to social dominance of abstract clock-time and the consolidation of capitalist social relations go hand in hand. As capitalism takes a hold of social-property relations, abstract time takes a hold of social time relations.

As I have made clear, the existence of such abstract time-units is a product of history. Marx made a similar point when he noted that the uses of things and their socially validated forms of measurement have been ‘discovered’ by humans throughout history,

¹²⁵ As such, the quantity of abstract labour-time congealed in a commodity is not merely ‘measured’ in production (or perhaps only retrospectively), but rather deduced from exchange.

¹²⁶ This points to the way in which Marx’s categories are not mere economic or quantitative categories, they are social categories. Labour-time is not a mere quantitative economic concept, rather, by appreciating how labour-time is a social construction which implies the whole social history of clocks and clock-time, one can consider the social reach of such a category.

'The discovery of these ways and hence of the manifold uses of things is the work of history. So also is the invention of socially recognized standards of measurement for the quantities of these useful objects' (1976, p. 125). Here Marx tells us that the social standards that are used to measure value, to put it in quantifiable terms so it can be exchanged, are also the 'work of history', i.e. social constructs that have evolved throughout the history of humankind. Clock-time is indeed, as I have discussed in chapter II, such a socio-historical construct.

Interestingly, in *Capital*, Marx goes on to explore the money-form, as the social expression of value itself, as the material representation of labour-time,¹²⁷ but he does not enquire more thoroughly into the 'time-form' which accompanies the formation of value in capitalist societies. Commodities under capitalism have a common value-form, but, what I point out here is that the labour-time congealed in them also has a common 'time-form'. An analysis of this 'time-form' helps us grasp the intricate relationship between abstract clock-time and value in capitalist societies. We can better appreciate how abstract clock-time is embedded in, and is a fundamental part of the formation of social value in capitalism. Abstract time gets embedded in value formation in capitalist societies to the extent that it accompanies the whole cluster of social determinations formed by capitalist value. Indeed, in its social function as a quantitative expression of embodied labour-time in commodities (including, crucially, the commodity labour-power itself), abstract time is a fundamental part of the whole edifice of capitalist value formation. Such a cluster of determinations implies abstract clock-time measuring labour-time, which in turn expresses expenditures of abstract labour, which is itself the substance of value, whose magnitude is deduced in commodity exchange relations. Value formation, in capitalist societies, is thus accompanied by the specific socio-historical abstract clock-time form that social time has taken in the course of history. Both historically and theoretically, in capitalist value formation, we find a social time-form having become embedded in capitalist social time relations.

¹²⁷ 'money as a measure of value is the necessary form of appearance of the measure of value which is immanent in commodities, namely labour-time' (Marx, 1976, p. 188). Materially representing labour-time in money is thus 'necessary' in order to *abstract* labour from its useful character.

One point worth emphasizing here is how labour and time become *fused* in a very peculiar way in capitalism. Indeed, capitalist value formation entails that abstract labour is tied to abstract time. The performance of labour in capitalism thus becomes predicated on this relationship of abstract labour and abstract time, labour becomes labour-power, which is valued in terms of labour-time. The performance of labour in non-capitalist societies stayed predicated mostly on its own specific cluster of concrete times. The transition to capitalism is also a transition from concretely predicated 'times of labour' to abstract 'labour-time'. Capitalist value formation displays a tendency to abstract from the concrete time of labour, and aims at disembodiment of labour from its concrete time. This disembodiment, this abstraction of labour in capitalism, occurs in its fusion with a disembodied, abstract time. This systematic fusion of human labour with an abstract time is a historical specificity: pre-capitalist labour processes remained, as a general rule, fused with their own particular concrete times.

Let me now turn to the other condition (A) which makes the passage from concrete to abstract time possible: the formation of a full-fledged labour market.

C) Labour-market, capitalist industrialization and clock-time.

The socio-historical roots of such a fusion between human labour and an abstract form of social time are to be found in the emergence of 'labour-power', i.e. in the socio-historical process of the *commodification of human labour*. The formation of a labour-market, the historical appearance of labour-power as a commodity, represents the first step through which capitalist social relations and clock-time will be united.

As Marx has shown, labour-power is a 'special' commodity. Like other commodities, labour-power has a use-value and an exchange-value. Its exchange-value is fixed in the wage, which is standardized around the socio-historically determined value of its own material reproduction, i.e. the reproduction of the worker's body and capacity to work. Its use-value, however, is to produce exchange-value, and this is what makes labour-power a special commodity. What Marx shows in *Capital*, is that the consumption

of labour-power's use-value (by the capitalist) produces surplus-value, i.e. more value than has been expended in its purchase. In short, the value produced by the worker and appropriated by the capitalist (labour-power's use-value) *exceeds* what the worker receives in terms of wage (labour-power's exchange-value). This 'surplus' amount, surplus-value, is the specifically capitalist way in which surplus labour is pumped out of producers under capitalist social-property relations. From the appropriation by 'extra-economic' means which characterized pre-capitalist social-property relations, we pass onto pure 'economic' appropriation, appropriation in the process of production itself. What is worth emphasizing here, is how such a process also entails a change in the *time of appropriation*, as I had briefly noted in chapter II. While the 'extra-economic' moment of appropriation came *after* the moment of production under pre-capitalist social relations, in capitalism the moment of appropriation is now fused with the moment of production: appropriation and production occur *simultaneously*, they are part of the same process.

Under capitalism, labour and exploitation are temporally fused through the apparatus of clock-time and its abstract time-form. As such, on the one hand we have a fusion between labour and (abstract) time under capitalism, and we also have a fusion of the moment of production and the moment of appropriation. The very possibility of a historical transition from 'extra-economic' to 'economic' appropriation, from appropriation after production to appropriation in and through production, can be seen as concomitant with the fusion of human labour with abstract time-units, with the passage from the 'time of labour' to 'labour-time'.

As I have discussed in chapter II, the historical transition to capitalist social relations in the English countryside was characterized by an increasing commodification of labour in the form of labour-power. Such a process, i.e. the formation of a labour market, is a specific characteristic of the historical development of capitalist social-property relations. As Braverman puts it, 'Capitalist production requires exchange relations, commodities and money, but its *differencia specifica* is the purchase and sale of labour-power' (Braverman, 1974, p. 52). Figures put together by historian Robert Lachman show an unmistakable increase in the number and proportion of English

peasants employed as wage-labourers during this transition phase: from around 10% before the third quarter of the 16th century, there is a dramatic rise starting around 1567 to the extent that by 1600, 35% of the peasants are employed as wage-labourers, while the figure goes up to 56% at the moment of the Glorious Revolution (1688). For the same period, in England and Wales, the percentage of landless peasants goes from 11% around 1550 to 40% in 1640 (Lachmann, 1987, pp. 17, 129). The Revolutions of the 17th century further consolidated and accelerated the legal, economic and political processes associated with the creation of a labour market.

The emerging social relations in the English countryside produced a differentiation of the English peasantry, mainly between wage-labourers and capitalist tenants, who increasingly became the sellers and buyers of labour-power in a growing labour market. This process was accompanied, as I have discussed in the previous chapter, by a destruction of communal property rights, and the consolidation of land into large holdings.¹²⁸ Historically speaking, the commodification of labour went to a great extent hand in hand with the commodification of land: the creation of large holdings meant severing small occupiers from their means of subsistence, forcing them to sell their labour-power on the market in order to make a living.

The emergence of a labour market and capitalist social-property relations is also related to the growth of trade and industry which 'created new capitalist fortunes, expanded markets for agricultural products and generated a flow of bourgeois investments in the land' (McNally, 1993, pp. 10). Then again, the cities and urban centers should not be the only focus of attention: with regards to the late Middle Ages and early modern period, Rodney Hilton noted the shift of the manufacturing industries in England from the urban centers to small towns and villages where there occurred a growth of small-scale commodity production, especially in pastoral regions (Hilton, 1985a, p. 136; McNally, 1993, p. 25). As McNally summarizes, two patterns of socio-economic life cohabit and feed off each other in England around 1600, 'one based on large-scale arable

¹²⁸ This last feature is especially true for the 16th century. The Reformation, and subsequent sale of Church land participated in the growth of a land market. As McNally remarks, 'The sale of Church lands thus accelerated the social differentiation of the peasantry, the trend towards enclosure and consolidation, and the increasing presence of large capital farms' (McNally, 1993, p. 10).

farming; the other involving regions which combined pastoral agriculture with growing rural industries' (McNally, 1993, p. 25). Often in this transitional period, small peasants would combine wage-labour with the farming of tiny plots of land, more often than not less than an acre in size. Small peasants, in some instances, held on to small plots of land and cottages, a transitional feature of socio-economic life which has some commentators using the term 'semi-proletariat' when referring to a part of the small-peasantry in that period (see McNally, 1993, p. 11, 15, 18).

The commodification of labour-power, as the *differencia specifica* of capitalist production, is thus a historical process that finds its roots, in the case of England, in the transition phase of agrarian capitalism, and furthermore in the growth of small scale commodity production in small towns and villages. As McNally summarizes this historical process,

While there is no exact point of transition between petty commodity production and capitalist production which can be marked with precision, the essential features of this process can be clearly delineated. In essence, they involve the metamorphosis of peasant craftsmen or yeoman manufacturers into merchants and employers, who subordinate the labour of a growing number of small producers, and who market their own output (and that of others) (McNally, 1993, p. 27).

Accordingly, the emergence of industrial capitalism does not proceed from a separation between agriculture and industry: for a significant period of time, industrial production is predicated on a domestic system connected to agriculture, and by the growth, as Hilton indicated, of rural industries. The market increasingly becomes a compulsion, rather than an opportunity. It is the market dependence of producers and appropriators which increasingly subjects social reproduction, as well as the life of individuals, to market 'rationality' and to the law of value. The commodification of labour, the emergence of abstract labour in the form of labour-power, under the market's attribution of a price to the commodity labour, is the foremost process of emerging capitalist social relations.

The formation of a labour market, as a fundamental condition of the spread and sway of capitalist social-property relations, did not happen in a social void. The creation of a free market in labour 'was the result of decades of coercive measures, embodied in a

regime of law and punishment, designed to destroy communal property rights and establish the unfettered sway of capitalist private property' (McNally, 1993, p. 41).¹²⁹ It also occurred in a context of widespread colonial exploitation and specific forms of gender oppression. The increasing social dominance of the labour market as the main labour-allocating system underpins the processes of commodification at work from the early history of capitalist social relations to today. What is notable for my point, here, is that this socio-historical process of commodification of human labour is a necessary condition for the passage from concrete time to abstract time, just as the social diffusion of a temporal infrastructure predicated on abstract time-units was. These two processes are related. With the formation of a labour market, abstract time acquires a growing social significance. In return, the spread of abstract time runs parallel to the growth of the labour market. Those two processes go hand in hand, both theoretically and historically.

Having discussed the formation of a labour market and its relation to the *spread* of abstract clock-time *qua* social time, I will now turn to the rise to hegemony of clock-time *qua* the hegemonic social time. This hegemonic social time has a name: World Standard Time.

D) World Standard Time

The social hegemony of clock-time is something that most people today take for granted. It has become so ingrained in our collective consciousness that it appears as transhistorical, especially given the fact that historical narratives and historiography in general use this time system to temporally locate events and processes which have happened or unfolded way before the advent of this system. It needs to be recalled that the hegemony of such a time-system is indeed a very recent feature of socio-historical time relations, which did not come about before the rise to social hegemony of capitalist social-property relations. As capitalist social-property relations came to shape social

¹²⁹ Once industrial capitalism started to take hold, paralegal structures of factory discipline were not only enforced inside the workplace, but 'were often enlarged to an entire social system covering whole townships' (Braverman, 1974, p. 66).

(re)production and social life, as the labour-market became the main way through which social labour was allocated, as the accumulation of capital directed more and more human activities, clock-time rose to social ascendancy as the hegemonic form of social time relation.

What exactly is entailed by the expression 'rise to social hegemony' that I have used with regards to clock-time thus far? Am I describing a process in which all social times are extinguished or negated by clock-time? Do I mean that clock-time destroys the multiplicity of social times? Precise answers to these questions are needed. 'Hegemonic', here, does not mean 'sole' or 'only'. It rather means that capitalism's tendency to abstract from concrete times and to reduce them to a common denominator, thus alienating and subsuming the multiple concrete times which make up the social fabric, is precisely that: a *tendency* ingrained in processes of capitalist social valuation. This hegemonic form of social time thus came to express and mediate the formation of capitalist social value, and tends to alienate and subsume concrete times, in a process which entails a logic of domination and resistance. Clock-time's 'hegemony' means that it tends to dominate and subordinate other time relations, i.e. it becomes the dominant ordering of time, but always in a contested relation with other temporalities. I will return to that point below.

The following section will argue that the rise of clock-time to social hegemony in the 19th century finds its ultimate expression in the establishment of World Standard Time. Moreover, I would like to clarify the relationship between clock-time and other social times which can be grasped through the concepts of *temporal alienation*. Such a focus on clock-time is thus not meant to downplay the social and personal significance of multiple times, but rather to highlight the *tendency* of clock-time to alienate them.

As capitalist social-property relations historically came to exert their sway over parts of Western Europe and the United States during the 18th and 19th century (Beaud, 2001, pp. 82-135) abstract time rose to social hegemony in the form of clock-time. This process is highlighted by the rise to 'world' hegemony of World Standard Time: not only did clock-time penetrate the very fabric of social (re)productive activities, it also progressively came to subsume local and regional systems of time-reckoning under *one*

integrated system across space. The history of World Standard Time is intimately related to the diffusion and social ascendancy of capitalist social time relations: societies in which capitalism has become the dominant form of social-property relations are also the societies in which clock-time will become the hegemonic social time relation. It is also these same societies which will impose clock-time on non-Western societies through colonialism, imperialism or other forms of geopolitical pressure and oppression. The dominance of the West over other parts of the world through colonialism and imperialism means that World Standard Time is not only hegemonic in capitalist states, but over the globe as a whole. As Rifkin puts it,

It took six hundred years to revolutionize the temporal orientation of Europe. It took only one-third of that time to extend the temporal revolution to countries and cultures across the globe. In the sixteenth, seventeenth, and eighteenth centuries, European armies colonized the territories of the planet. In the nineteenth and twentieth centuries, European and American industry colonized the time frame of much of the rest of the world (Rifkin, 1987, p. 134).

World Standard Time was introduced at the end of the 19th century. Although the idea of a coordinated world time system had been discussed by authorities in countries such as Germany, England, France and the United States, whether on the grounds of scientific, economic or military arguments, the first true implementation of standard time was made by one of the distinct products of the growth of capitalist production: the railroad system.¹³⁰ It was the most capitalistically advanced country at the time, Britain, which took the first step towards standard time in 1847 when the British Railway Clearing House called for each company to harmonize local times into one standard, the Greenwich Mean Time (GMT), which is the mean solar time as it is observed in the city of Greenwich, near London, in southeast England. The invention of the telegraph, first tried out ten years earlier, had made it possible to send a time signal almost instantaneously to a network of railway stations. Local social times were soon subsumed under standard GMT, despite 'considerable psychological and social resistance' from local communities wanting to preserve their local social times from 'railway-time

¹³⁰ The growth of the railroad system, for example in 19th century US, is striking: in 1832, the US territory had 229 miles of railway lines, by 1880, they were 94,671 miles long (Bartky, 1989, p. 29). Roughly fifty thousand miles of new lines were built in Europe between 1850 and 1870 (Nguyen, 1992, p. 32).

aggression' (Landes, 1983, pp. 286-7). In 1880, GMT was legally adopted as standard time for the whole country - as it was already playing a similar role in the world of navigation and shipping, and was already at work in various sectors of socio-economic practices to the extent that Royal Assent merely acknowledged what was already a widespread practice in 19th century England (Falk, 2008, p. 72; Rifkin, 1987, p.133; Landes, 1983, pp. 285-6; Nguyen, 1992, p. 32).¹³¹

In the United States, it is also to railroad companies that we owe the first implementations of standard time. As Kern relates,

Around 1870, if a traveler from Washington to San Francisco set his watch in every town he passed through, he would have set it over two hundred times. The railroads attempted to deal with this problem by using a separate time for each region. Thus cities along the Pennsylvania Railroad were put on Philadelphia time, which ran five minutes behind New York time. However, in 1870 there were still about 80 different railroad times in the United States alone (1983, p. 12).

In such a context which seems, from our contemporary perspective, like a temporal chaos, it is on November 18, 1883 that the American railroads imposed a uniform time system on the country as a whole, ending the confusion which had hampered their ability to make a profit (Kern, 1983, p. 12). Indeed, as capitalist production was increasingly in need of coordination inside and between economic regions, as the movement of goods and commodities over great distances with the development of markets increasingly determined the rate of profit, as the production and realization of surplus-value called for a uniform system of time-determination, the railroad system was the major player in the imposition of standard time both in Britain and in the US. Notwithstanding resistance, the transition from a 'specialized' railroad time to a fully-fledged civil and public time was made rather swiftly: cities in the US quickly passed ordinances shifting their civil times to 'railroad time' and the new system rapidly became the standard form of social time (Bartky, 1989, pp. 25-6; Zerubavel, 1982, p. 10).

In 1884, the dominant classes of 25 states were represented at the International Meridian Conference in Washington which was held at the request of then US president,

¹³¹ 'By the time Royal Assent was given to the Statutes (Definition of Time) Bill on 2 August 1880, practically all (98%) of the public clocks in England had already been set to GMT' (Nguyen, 1992, p. 32).

Chester A. Arthur. The dominant countries of the epoch were represented, as well as several Latin-American countries inside the range of American imperium in the context resulting from an American foreign policy based on the Monroe doctrine. Building on the idea of a World Standard Time that engineer Sandford Fleming (the Canadian delegate at the conference) had been advocating since 1879 and which suggested that the Earth should be divided into 24 equal time zones of fifteen degrees of longitude each, the conference participants agreed on establishing Greenwich as the zero meridian of an emerging World Standard Time system, they determined the exact length of the day, divided the Earth into twenty-four zones one hour apart, and agreed on a precise beginning to the universal day (Kern, 1983, p. 12; Falk, 2008, p. 73; Adam, 1995, pp. 113-4; Zerubavel, 1982, pp. 14-16; Nguyen, 1992, p. 33). World Standard Time was not adopted and implemented overnight, but the process was launched and other countries would ultimately join this time system from then on. Although within ten years many countries such as Belgium, Austria-Hungary, Italy, Japan, the US and Britain had adopted World Standard Time, the process of complete standardization of the globe would take a while. France took some time to join, especially due to its refusal to accept an English prime meridian, but once it did, it aimed at becoming the world leader in World Standard Time institutions. In 1912, Raymond Poincaré lobbied for Paris to host the International Conference on Time which decided on a universal system of determining time and of maintaining accurate time signals around the world. On July 1, 1913, the Eiffel Tower emitted the first time signal to be transmitted around the world, '1913 is the beginning of *world time*' (Adam, 1995, p. 114). From then on, local systems of social time would come under the sway of World Standard Time, as Kern puts it, 'Whatever charm local time might have once had, the world was fated to wake up with buzzers and bells triggered by impulses that traveled around the world at the speed of light' (Kern, 1983, p. 14). Local social times as well as the multiple concrete times that make up the social fabric came under the hegemony of *one public* – abstract – time: clock-time, and this at the global level.¹³²

¹³² In other words, the 'present' as determined by clock-time became global, 'the present was extended

This development of World Standard Time can be analyzed theoretically through the lens that I have adopted so far. Indeed, what came to dominate social time relations through this process was precisely abstract clock time as it had been developing hand-in-hand with capitalism. Some writers have mentioned this relation (for example Adam, 1995; Giddens, 1981), but few, if any at all, have emphasized a reading in which World Standard Time is theorized as a manifestation of the formation of *value* in capitalist societies. This relationship highlights the fact that capitalism is not a mere 'economic' system, but a social system in which the requirements and the logic of capital accumulation tend to colonize more and more social practices in contested processes. As value in capitalism is now tied to abstract time, social practices will tend to be tied similarly to clock-time: since capitalist social value is inseparable from abstract time, the times of social practices from all across the social field will tend to be socially expressed according to clock-time criteria (see also Adam, 1995, p. 101). While the expression of concrete times in terms of clock-time both in aspects of everyday social life and in specific specialized social spheres is not necessarily new, the *hegemonic* and *systematic* character of such practices is unmistakably a feature of capitalism and its time-system expressed at the global scale through World Standard Time. World Standard Time, I argue, is thus the product of capitalist social time relations in which abstract clock-time has become hegemonic.

Many commentators have treated this shift to standard time as a move away from 'natural' time and towards 'social' time. Standard time is seen here as representing a fundamental severing of the relationship between humans and nature.¹³³ While Rifkin (1987) has emphasized the 'unnatural' characteristic of standard time, Zerubavel has emphasized its 'artificiality', and described the shift to standard time as a move away from nature,

The abolition of local time-reckoning practices and the introduction of supralocal standards of time mark a most significant point in the history of man's relation to time, namely, the transition from a *naturally* based manner of time reckoning to a *socially*

spatially to encircle the globe; it became a *global present*' (Adam, 1995, p. 112).

¹³³ Lewis Mumford famously described clock-time as an alienation from nature, a loss of 'organic time' *qua* human time (Mumford, 1967).

based one. Since we no longer set our clocks by the sun, the time they indicate is no longer derived directly from nature. With the exception of a single meridian within each time zone, there is always at least some discrepancy between standard clock time and actual solar time. In dissociating the former from the latter, we have removed ourselves one step further away from nature' (Zerubavel, 1982, p. 19, my emphasis).

For Zerubavel, what has replaced nature here is a 'principle of rationality' (1982, p. 20). In such a reading, some sort of 'cunning of rationality' is at work throughout the process of the rise of clock-time, which is interpreted as an element of the rationalization of the modern world. For Adam too, World Standard Time is the result of a process of 'rationalization', 'with the introduction of standardized world time and global time zones at the beginning of this century the rationalization of time was brought to its logical conclusion' (1995, p. 88, see also p. 113). For one thing, the social conditions which make 'rationality' rational are rarely questioned in those accounts. Furthermore, while such a process is interpreted as a move away from nature by Zerubavel in particular, there is no indication on his part on how the setting of standard time through clocks which are based on the measure of the number of oscillations of an atom of caesium (as it is now) would be less 'natural' than following the movement of the sun. It is not enough to posit standard time as 'unnatural', 'artificial' or 'rational', or to treat it as a mere 'machine time' (Adam, 1995, p. 90; Leccardi, 1996, p. 170). What is needed is an analysis which grounds such an abstract temporal system in actual socio-historical processes which create and reproduce this real abstraction. The formation of capitalist value, understood here as a socio-historical process, is part of the ground on which World Standard Time is erected.

This permits us to highlight the *conflict* at work in social time relations between different times, and to understand the 'multiplicity' of times as a 'struggling entity'. It also permits us to ascribe a *logic of power* – as a process of domination and resistance – to phenomena which otherwise might seem either 'neutral', neutrally 'multiple' or merely 'complex'. This process of domination and resistance in the present case takes place in the relationship between abstract and concrete time. The abstract time of capitalist clock-time strives to abstract from, reduce and subsume concrete times into its logic, it strives to alienate human beings from their concrete times. Here, let me examine this logic of power

further by delineating it through the mobilization of the concept of *alienation*, as well as interrogate the way in which time is subject to the reifying processes at work in capitalist societies.

E) Temporal Alienation and Reification

What exactly happens to these 'multiple' social times in that period of the parallel rise to social hegemony of abstract clock-time and capitalist social relations? Are they 'obscured', and thus in need for social theorists to bring them back in the light of social studies? That might be the case, but if it is so, one needs to explain how and why they are 'obscured'. It does not suffice to counterpose those marginalized 'multiple' social times to clock-time. One has to specify the nature of their relationship. I have rooted the relationship between abstract and concrete time in capitalism in the dual character of labour and the (contested) processes of value formation at work in capitalist society. As such, one way to look at this problem is to suggest that abstract clock-time and the multiple concrete times of human life are part of a processual 'struggling entity'. The analysis of the temporality of capitalist production *per se* has shown how time takes on a dual character, simultaneously consisting of the concrete time of actual labourers who expend their life energies in concrete labour processes, and of processes governed by abstract time and the value relations (based on abstract human labour) that correspond to it. Moreover, because lived temporalities are not simply those of work, but also those of the seasons, festivity, reproduction, recreation, bodies, birth and death, and so on, a multiplicity of concrete times are embedded in a tense and sometimes contradictory relation with abstract time.

I would like here to point out a further way in which we can describe the *relationship* – not merely the opposition – between abstract clock-time and multiple social times. I would like to suggest that the struggle between abstract clock-time and concrete times of human lives and social activities can be approached through the concept of alienation. In what follows, I will open the question of temporal alienation in capitalism. I

will identify alienation from the effects of abstract time on the capitalist labour process, and also point to temporal alienation in temporal social practices outside the labour process *per se*.

The question of how or in what ways time is alienated under capitalist social relations entails a pretty straightforward first step towards an answer. I have noted that one basic feature of capitalism is the sale and purchase of labour-power, predicated on the separation of the producers from their means of subsistence and the means of production, which goes hand in hand, both theoretically and historically, with the market compulsion for the producers to sell their labour, and for the appropriators to buy it. Such an exchange creates and reproduces a labour market. What the appropriator buys, as noted above, is the worker's labour-power for a definite period of time, which is measured in terms of abstract clock-time-units. In other words, the appropriator buys a definite period of time in which labour-power is to be expended, and the worker sells his or her labour-time, his or her time, on the market.¹³⁴ Workers' time, as a result, is both dominated by, and alienated to, the appropriator, since this time is not under the control of the worker anymore, but put at the disposal of the capitalist who uses it to produce, or facilitate the realization of, surplus-value, and therefore to make a profit. The time of producers, here, is alienated when it is sold to the capitalist, while in pre-capitalist wage-relations time could be dominated, but was not systematically alienated. As workers' time is alienated as soon as it is sold in the form of the expenditure of labour-power's duration for the profit of another, the concrete time of the labour process is alienated from producers in a capitalist work setting. While I remarked, in chapter II, that under feudal social relations in Europe, the labour process itself was not controlled, or organized, by lords or employers, but by producers themselves, this control is taken away from them to an extreme extent in industrial capitalism. With the control of the labour process passing in the hands of the capitalist, it 'has now become specifically a process for the expansion of capital, the creation of a profit (...) the labour process is dominated and shaped by the accumulation of capital' (Braverman, 1974, p. 53). Such an 'alienation of the labour

¹³⁴ 'what the worker sells, and what the capitalist buys, is not an agreed amount of labour, but the power to labour over an agreed period of time' (Braverman, 1974, p. 54).

process' (Braverman, 1974, p. 57) expresses the alienation of the concrete times of human labour.

Therefore, in the passage from pre-capitalist 'time of labour' to capitalist 'labour-time', *both* time and labour have become commodities. Not merely is the producer's labour alienated, as it is in specific forms in every class societies, but more directly the *time* of labour, the concrete times of human labouring activities, is alienated to the appropriator in the capitalist social process entailing the buying and selling of labour-power on the market. The commodification of labour, then, entails a specific form of *temporal alienation*. This specific form also exhibits symptoms of the *reification* of time under capitalist social relations. Indeed, as a measure of the duration of the expenditure of labour-power, time which is sold to the capitalist, concomitantly with its alienation, is reified, since in its fusion with abstract labour, it becomes itself a commodity, a 'thing' bought and sold on the market. Let me illustrate the alienation of the time of labour through the example of scientific management, which represents one the purest forms of fusion between human labour and abstract time-units.

Here, I want to provide an illustration of the concrete manifestations of the passage from the 'time of labour' to 'labour-time'. One historical phenomenon, representing a distinctively capitalist form of organization of labour, might help to grasp the fundamental characteristics of the socio-historical relationship between labour and time under capitalism, or how alienated labour also entails alienated time in capitalism. This phenomenon, which will serve as a historical illustration of the fusion between labour and abstract clock-time under capitalist social relations and the resulting alienation of time, is the 'scientific management' of labour, which is here considered as a historically mature form of the relationship between labour and time in industrial capitalism. Scientific management, as a historical product of capitalist social relations, represents one of the 'purest' forms of the relationship between labour and time under capitalism. This example shall illustrate concretely the alienation of the time of labour in capitalist societies, and provide a stepping stone for other examples below pertaining to

the alienation of social temporal conceptions and practices outside the workplace, or not 'directly' pertaining to the labour process.

Scientific management, or, as one of its most famous variant is known: Taylorism, is a form of organization of industrial labour which is related to the work of Frederick Taylor, and which has been historically applied first in the United States and Britain at the end of the 19th and start of the 20th century, and spread rapidly in various parts of the capitalist world, especially in the context of mass production and the First World War (Braverman, 1974, p. 91; Beaud, 2001, p. 153, 170).

The management, control and organization of *labour-time* by the capitalist who has bought it, found its logical development in the management, control and organization of the *labour process* by employers. This management did not come about in a fully-fledged form as soon as industries began to flourish, or as soon as a significant number of workers were aggregated in one facility, although these processes formed the precondition for scientific management. For a non-negligible period of industrial development, the labour process remained under the control of the producers to a significant extent, as they carried on, and built upon, the traditional methods of producing which they had inherited from the traditional feudal and guild handicraft methods of production.¹³⁵ Although various systems of 'putting-out', or of indirect control of the labour process by the capitalist, did endure in various forms throughout the period of industrial development, it is unmistakable that the capitalist class progressively came to exert its direct sway over the labour process. Management of the labour process, of which the central concept is 'control' (Braverman, 1974, p. 68), came to be exerted by the buyer of labour-power.

One way in which this has been done is the division of labour inside the workshop, the breaking down of tasks that were historically performed, for instance in medieval craftsmanship, by one producer, into different tasks which were now to be

¹³⁵ However, the problem of management did arise already in this period, in a 'rudimentary form' (Braverman, 1974, p. 59).

performed by different workers.¹³⁶ As such, the separation of the operations involved in production, followed by their assignment to different workers, are the two fundamental processes at work in the manufacturing division of labour, which is not a function of the capitalist social division of labour anarchically imposed by the market, but rather a function of planning and control on the part of the buyer of labour-power.

Taylorism and its offshoots, such as 'time and motion studies', are inscribed in this context of the manufacturing division of labour and the increasing control of the labour process by the employers. 'Scientific management', as it is often called, can be seen as a way to tackle 'scientifically' the problems of the control of labour in the most 'effective' way. It is, in Braverman words, 'a science of the management of others' work under capitalist conditions (...) an answer to the specific problem of how best to control alienated labour' (Braverman, 1974, p. 90). Taylorism was part of a concerted and conscious effort of the capitalist class to bring the labour process completely under their control. Taylorism's aim was indeed that 'control over the labour process must pass into the hands of management, not only in a formal sense but by the control and dictation of each step of the process, including its mode of performance' (Braverman, 1974, p. 100). I add to this point that the control of the labour process is not only about 'labour', but also, more fundamentally, about labour-*time*. We could thus reformulate Braverman's quote by saying that what is 'scientifically managed' is other's *time* under capitalist conditions, and that Taylorism and its offshoots represent an answer to the specific problem of how best – often in terms of relative surplus-value production – to control and organize alienated *time*.

Taylorism was based on three principles of scientific management. The first principle revolves around the knowledge associated with the performance of a task, which shall pass onto the managers. As Taylor himself put it, 'the managers assume (...) the burden of gathering together all of the traditional knowledge which in the past has been possessed by the workmen and then of classifying, tabulating, and reducing this

¹³⁶ The division of labour inside the factory, the 'manufacturing division of labour', is not a natural extension of the social division of labour which is effected along class and/or gender lines in most societies. See Braverman (1974, pp. 70-5).

knowledge to rules, laws and formulae' (Taylor, quoted in Braverman, 1974, p. 112). This knowledge, which shall be developed and gathered by the managers in order to monopolize it, was historically embedded in the performance of the task itself, and thus belonged to the producer,

from earliest times to the Industrial Revolution the craft or skilled trade was the basic unit, the elementary cell of the labour process. In each craft the worker was presumed to be the master of a body of traditional knowledge, and methods and procedures were left to his or her discretion. In each such worker reposed the accumulated knowledge of materials and processes by which production was accomplished in the craft (Braverman, 1974, p. 109).

With the emergence of scientific management, a very specific separation of mental capacities and manual performance of labour occurs. What is separated here, is the knowledge embedded in the performance of the task - of which the producer was historically the master - from the actual action. In other words, the labour process is dissociated from the skills of the producers, conception is dissociated from action, 'hand from brain' (the unity of which distinguished human labour from animal labour). (Braverman, 1974, p. 113, 126). This separation of knowledge and action forms Taylor's second principle, 'All possible brain work should be removed from the shop and centered in the planning or laying-out department' (Taylor, quoted in Braverman, 1974, p. 113). The concentration of this knowledge of the labour process into the hands of the managers is concomitant to the producer's deprivation of that very same knowledge.

This gathering and monopolization of the knowledge of the labour process leads to Taylor's third principle, which resides in the systematic pre-planning and pre-calculation of all elements of the labour process by the management staff.¹³⁷ The labour process itself is thus completely alienated from the producers, who, instead of being masters of their crafts and their concrete times, become mere appendages of a labour process which is

¹³⁷ Pre-planning in itself is obviously not necessarily a 'new' feature of capitalism. Peasants often pre-planned their work, and communal production often entailed pre-planning too. 'Planism' is actually often described as the antithesis of market anarchy. If capitalism relies on market mechanisms to allocate resources, it must be said that inside most capitalist firms, the market is far from being the master, and 'planning' is used as a very rational allocator of resources.

designed in its entirety by the management staff.¹³⁸ These principles, and their practical application to capitalist labour, illustrate a fundamental tendency of capitalism: that of reducing human labour to homogenized, empty, constant and standardized labour-power.

To add on to this reduction of human labour to labour-power, these principles also illustrate the extent to which the concrete time of labour under capitalism is reduced to homogenized, empty, constant abstract labour-time. It is not only the knowledge of the labour process which is alienated from the producers, but moreover the mastery over the *process* itself. The producer's labour comes to be inextricably embedded in abstract time measurements, the concrete temporalities, time patterns, time-sequences and time frames of the task are determined by an alien will, that of the accumulation of capital embodied in the management staff.¹³⁹ While pre-capitalist producers exerted their knowledge of time sequences, socially mediated natural processes and cycles of change, timing, etc., in order to fulfill the tasks involved in their labour, i.e. they controlled and organized the *processes* involved in their labouring activities which socially mediated nature, producers under capitalism are subjected to an alienated time, since the concrete time of the work process, what it entails as per the producer's brain and body functions, knowledge, and performance of the tasks, are abstracted from their concrete properties and reduced to an empty abstract time. Indeed, one of the basic operations of Taylorism was the breaking down of each particular movement involved in the labour process in order to 'time' it. It is by measuring, formatting, and abstracting the concrete times of the labour process that Taylorism brought the control of the labour process to a new level.

The well-known 'time and motion studies', an offshoot of Taylorism first brought about by one of its disciples, Frank Gilbreth, are still very much performed in today's factories, offices and distribution centers of all sorts. Gilbreth pushed Taylor's time studies further. While Taylor's time studies aimed at measuring the duration, in terms of abstract clock-time-units, of each component operation of a work process, it was still, according to the managing class of the time, too much 'tied to particular forms of

¹³⁸ Workers as mere appendages of the labour process finds a forceful expression in the fordist assembly line, see Nguyen (1992, p. 40).

¹³⁹ Although the capitalist class 'controls' labour-time in this way, both the time that they control and the way they control it is dictated to them by the compulsion of abstract time.

concrete labour' (Braverman, 1974, p. 173; on Gilbreth and Taylor see also Nguyen, 1992, pp. 38-9). What Gilbreth's time and motion studies brought about was the detailed investigation, classification and standardization of the basic movements of the human body, 'regardless of the particular and concrete form of the labour in which these motions are used' (Braverman, 1974, p. 173). The movements of the body were standardized in such a way that the resulting classification lost all ties to concrete labour, the concrete time of labouring practices was broken down by the stopwatch in order to be reassembled in terms of abstract time-units. One of the most widespread abstract time-units to have come out of these studies is the TMU, which is equivalent to 0.0036 seconds. Some other time-units such as those stemming from studies of eye movement, are even shorter in duration.¹⁴⁰ The very practices and movements of the human body, as well as the concrete time which they imply and produce as embodiments of actual and folded socio-natural-material cycles, were as a result lost as time and motion themselves became statistical problems. Time and motion, in the capitalist labour process, lose their concreteness, and are abstracted into 'standard data' systems. Taylorism, and its various offshoots such as time and motions studies, represents a fully-fledged form of the capitalist tendency to control the labour process and to alienate time. Alienated labour and alienated time, in the capitalist labour process, go hand in hand. As this example shows, not only is the concrete time of labour alienated, but also the very concrete times of human bodies.

Such practices and processes do imply a logic of domination and resistance. They are not 'neutral'. They are inscribed in, and illustrate, the struggle between concrete and abstract time in capitalism. As such they are resisted and contested. Social time relations are a struggling entity, 'the onslaught, from so many directions, upon the people's old working habits was not, of course, uncontested. In the first stage, we find simple resistance. But in the next stage, as the new time-discipline is imposed, so the workers begin to fight, not against time, but about it' (Thompson, 1993, p. 388).

¹⁴⁰ While some commentators emphasize that the push for even more precise time measurement is provided by the 'development of science', they neglect to take into account that what science is being used for in a capitalist context. The scientific field is traversed by industrial preoccupations, control and surveillance matters, while one of the most 'scientifically active' sector of society is the military.

For example, such a 'time and motion' study was conducted in the distribution center where I worked for 8 years and it implied a very clear gain in power for the employers over the workers, notwithstanding our resistance. One technique used by the employer and the 'experts' hired to perform the time and motion study in this particular case was to take the most rapid workers as guinea pigs for the study. Those rapid workers were then posited as the 'average' performers to which the others must catch up. Another technique resided in the very fact that an average time was ascribed to every task. This entailed, *by definition*, that there would *always* be workers performing under the average. This provided the employers with a ready-made pool of workers to harass, to threaten, and to force to augment their output of work under the pretext that they were 'below' the average, even if the average itself would have risen. A further point to note is that the employer dictated the way in which the tasks were to be performed. There were 'tutorials' being held for employees who could not match the 'average' time. The employer and his hired experts would try to change the way in which workers had previously performed their tasks. The labour process, broken down, was also dictated by the employer: how to perform the work was not a matter of the employee's own discretion, experience, expertise or concrete temporality, but rather under the control of the employer, all dedicated to increase productivity.

In this specific case, workers resisted and contested these methods with the means that were available to them in order to alleviate as much as possible the effects of the study on the amount of work they would now have to perform in a given period of time. The workers being observed for timing tried to slow down their movements, they emphasized to the employer the importance of periods of rest between periods of intense physical effort, they struggled to have time allocated for toilet breaks, to take a drink of water, and they challenged the results of the study on the basis of the risks such time-frames and work techniques posed to their health and security.

There is nothing new in such resistance in the work place. As a matter of fact, Taylor himself, who had been a worker before becoming a 'scientific consultant', made workers' resistance a central element in his analysis of the work process and of the

dynamics inside the workplace (Beaud, 2001, p. 147). Worker's strategies pertaining to 'slowing-down', deliberately keeping the output of work low so that every worker can meet it, and other forms of re-appropriation of time in the workplace are historically legion, and employers' efforts to combat such practices have historically been 'unceasing' (Beaud, 2001, p. 151). As Beaud reminds us, Taylorism and scientific management were historically opposed in many workplaces, leading for example to strikes at Renault in 1912 and 1913 where the workers refused to be timed (Beaud, 2001, p. 170). While such time and motions studies have been standardized and applied in vast sectors of the economy in capitalist countries, workers' resistance based on concrete time is still very much alive.

It is well documented that the archetypical struggle of the working class in the history of capitalism might very well be the struggle pertaining to the temporal duration of the workday. In *Capital*, Marx had analyzed such forms of workers' resistance. Time is thus at the center of domination and resistance in the work place, where abstract time strives to value concrete times. The example of scientific management shows how abstract and concrete time come into conflict in the workplace as capital accumulation and value formation dictate the abstraction from concrete times, while workers tend to resist such a tendency.

*

The question of the alienation of the time of labour in capitalist society is crucial because its answer leads us to appreciate how it is not merely 'workers' time' which is alienated. The tendency of capitalist abstract time to subsume concrete times in its logic reproduces a social time relation, clock-time, which is itself an alienated form. Indeed, the form of social time which is formative of social value under capitalist social relations, socially necessary labour-time, acquires a power of its own in that context, which subjects all agents to its sway. As Postone puts it,

socially necessary labour-time (...) does not simply describe the time expended in the production of a particular commodity; rather it is a category, by virtue of a process of general social mediation, determines the amount of time that producers must expend if they are to receive the full value of their labour-time. In other words, as a result of general social mediation, labour-time expenditure is transformed into a temporal norm that not

only is abstracted from, but also stands above and determines, individual action (Postone, 1993, p. 214).

In this way, while the magnitude of socially necessary labour-time depends on society as a whole, it is an independent variable with regards to individuals (1993, p. 215). The alienated character of capitalist social relations thus entails a temporal dimension: abstract time is alienated time, and the abstract framework in which socially necessary labour-time determines individual labours' value makes it so that '[socially necessary labour-time] is the temporal dimension of the abstract domination that characterizes the structure of alienated social relations' (Postone, 1993, p. 191). As such, it does not suffice to highlight how workers' time is alienated. The *ensemble* of capitalist society comes under the tendency of capitalism to abstract from concrete times, 'the temporal social forms (...) have a life of their own, and are compelling for all members of capitalist society – even if in a way that benefits the bourgeois class materially' (Postone, 1993, p. 214).

This 'autonomization' of time in capitalist social time relations has taken the form, as we have seen, of clock-time, and has been institutionalized globally in the social time regime of World Standard Time, in which time is reified, becomes a thing, its essence 'out-there', floating independently around the planet beyond human reach. This form of social time relations has been *systematized and universalized*. Alienation of time here is thus not limited to the particular workers selling their labour-power on the market. The relentless drive of capitalism to commodify has had as a result the *systematization* of clock-time *qua* commodified time; i.e. its unification into *one system*, and its propagation to more and more spheres of social practices and more and more regions of the globe in processes resisted to various degrees. While the very social form of value has become inextricably related to abstract time, the latter has become the hegemonic time relation in capitalist societies.

The time of human beings, as well as the time of social practices, has come to be expressed, measured, socially valued in the form of clock-time. This time has colonized social life in general. This time has also been, through cultural mediations, internalized by agents. The process of diffusion of house clocks and watches, the cultural meanings ascribed to punctuality, time-saving, time-efficiency and so forth (see Thompson, 1993),

might find their social origins in capitalist practices, but they are not limited to the labour process.

What I mean here is that the analysis of the alienation of labour-time is needed, but not final. It is a stepping stone to allow a further opening of this question onto the social field in general. Indeed, temporal alienation and reification have become *systemic* features of capitalist societies. Such capitalist social time relations in which the very *form* of clock-time and its abstract time-units is hegemonic, is thus specific to capitalist societies; such alienation is inscribed in the hegemony of the commodity form as the expression of social value.

*

If we go back to Marx's definition of alienation discussed in chapter I, we can read temporal alienation on three levels in relationship to the rise to hegemony of clock-time in capitalist societies: the alienation of one's own time, the alienation of 'natural' time, the alienation of one's own time from the time of others. Also, since our sense of time is also what makes us 'species beings', capitalist temporal alienation entails a further alienation of what makes us humans.

The alienation of one's own time is pretty straightforward: the selling of time on the market entails alienation by definition in a context of capitalist social time relations. Moreover, one can highlight an aspect of the alienation of one's own time by pointing to the tendency of abstract clock-time to regulate and control even one's leisure time. As the passage from the time of labour to 'labour-time' entailed the homogeneization of labour-time, emptying it from social intercourse, from other life activities intermingled with work which characterized most pre-capitalist 'times of labour', 'leisure' time as opposed to 'labour-time' was forged as a new category. 'Leisure-time' however, also tends to be controlled, defined and regulated by abstract clock-time. One of the manifestations of this resides in the way in which just as labour-time must yield as much value as possible, leisure-time must yield as much 'leisure' as possible, and that to lie idle during leisure time, to not 'profit' from it, to not use it adequately in a 'productive-of-leisure-way' can also be seen as a 'loss-of-time'.

Tackling the question of the alienation of 'nature's' time, for its part, might lead us to operate inside a dichotomy between nature and society, and thus needs to be approached carefully. Following Adam (1995), McNally (2001) and Elias (1992), among others, I have argued above that in order to study time, such a dichotomy must be rejected. Based on Adam's arguments for example (1995), it is not hard to see that social and natural times are *inseparable* from each other: 'natural' temporalities permeate social time, and vice-versa. In this light, instead of speaking of the alienation of natural time, it would be more accurate to speak of the alienation of 'socio-natural' time in terms of an abstract framework of World Standard Time entailing the temporal alienation of the ensemble of society, i.e. every individual's own time, and social time as a whole.

Recollecting Marx's own point on the matter leads us to appreciate how we could make sense of such an expression as 'alienation of socio-natural time'. Indeed, Marx argues that the alienation from nature is expressed in how human beings inserted in alienated social relations come to see their world (always-already socio-natural and historical) as not belonging to them, as not of their own making (Marx, 1988, pp. 71-75; see also Ollman, 1976). The environment in which human beings dwell, the 'human world', is precisely a product of the interaction between humans (themselves socio-natural temporal beings)¹⁴¹ and other socio-natural material temporal realities. However, alienation has as a result that human beings come to think of their own selves as strangers in an alien world, as pilgrims in a socio-material world which is subordinated to the realm of god, or as dwellers in an environment which is not of their own making, which does not belong to them, which is subject to alien forces (however this force might be represented: Power, nature, god, human nature, etc.). The social phenomenon of clock-time also comes to be seen as not belonging to people, but rather as 'natural', 'always-already there', 'neutral'. In any case, it is very much taken for granted. The abstract and reified framework hegemonic in capitalist social time relations of World Standard Time makes it appear as if people dwell in a social temporal reality over which they have no control: 'time flies', time is 'lost', 'time can never be stopped', time is independent of

¹⁴¹ As Adam beautifully puts it, '[people] *are* time, they *live* time, they *generate* time in interaction, they *fix* time in their artefacts' (Adam, 1995, p. 104).

events, actions, and human will, the 'march of time' is unstoppable. What is a systematized product based on specific social relations comes to be seen and experienced as an alien force way stronger than any human will. In that sense, humans are alienated from socio-natural time to the extent that clock-time, in capitalist societies, appears itself in an alienated and reified form and permeates as well as reproduces alienated social time relations.

The question of the alienation from each other's time is more subtle. After all, is not the systematization and globalization of World Standard Time precisely a way to bring together, 'on the same page', everyone's and every group's time? Does not the 'commensuration' of time in the form of standard clock-time-units provide a common ground between individuals' time? Most of the literature tends indeed to see it that way. Standard time is seen as a 'rational' development (Zerubavel, 1982), a common measure, a way of unifying the globe (Adam, 1995; Kern, 1983). The myriad of multiple social times come under one heading, clock-time, and this system of time-reckoning allows 'complex modern' societies to actually function by establishing a common standard over and above everyone's specific times. However, such arguments tend to portray clock-time as a simple tool. Often in these arguments, the complexity of clock-time is acknowledged – it is more than a mere 'tool' – but when an analysis of the actual effects of clock-time on interpersonal and social relations is needed, clock-time is portrayed as a mere tool facilitating social coordination (see Zerubavel, 1982 among others). In contrast, once one recognizes clock-time as a social time relation that does serve the interest of some social groups more than others, that has historically been created and reproduced as a social standard through relations of exploitation and alienation, that has come to subsume the social field through the proliferation of specific social time relations and through the decisions and actions of specific social interests, and which now occupies a hegemonic position with regards to the ensemble of social time relations, one can acknowledge the meaning of clock-time not as a mere tool of coordination, but also as a socially constituted *system* of social discipline, as a system of domination to which humans in capitalist societies have been subjected, and against which they often counterpose their

own concrete temporal realities and the ones of their social groups. In that sense, the apparent 'usefulness' of clock-time in helping establish a common measure between different individuals and groups in order to attune different times together can be seen in another light. Clock-time is both a product of exploitative relations and a system reproducing time-discipline and temporal alienation and reification – not merely a tool that 'brings people together'. Clock-time stands over and above individuals and dictates the pace and value of their actions and labours. Women's time, for example, has historically been marginalized, almost completely excluded, from the male-dominated world of clock-time. It is 'lived, given and generated in the shadow of the hegemony of universal clock-time' (Adam, 1995, p. 94). In that sense, the way in which everyone's time 'comes together' under clock-time is not un-alienated, but merely reproduces the overall scheme of temporal alienation and reification specific to capitalist social time relations.

Concrete socio-personal times also come to be subsumed and alienated under clock-time in many ways which often highlight the specific ways in which gender, racial, class and sexual oppression are at play under capitalism. In the next section, I would like to bring forward illustrations of the gendered and racialized character of temporal alienation and resistance in capitalist contexts.

F) The temporal form of domination and resistance: the dialectics between abstract and concrete time in capitalist social time relations

The question of the alienation of the labour process not only provided the argument with an illustration of the alienation of time under capitalism, but also leads directly into the thick of contradictions between abstract and concrete time in capitalism. These contradictions are based on processes of value formation in capitalist societies, and involve specific and pervasive forms of class, gender and racial oppression. In this section, I would like to further illustrate the temporal aspect of social conflict in capitalism in terms of a conflict between abstract and concrete time with class, gender and racial implications. As such, this will give me an opportunity to further delineate the

temporal characteristics of domination and resistance in the context of capitalist social time relations.

As noted, 'abstract' time under capitalist social relations is a time which has become involved in the formation of social value. This abstract time has acquired a power of its own, and entails processes of alienation and reification. Humans in capitalist societies tend to see time as this outward phenomenon, a reified 'thing' independent from their lives and actions, which nonetheless dominates their very lives as human beings, installing the sense of an irreducible gap between the reified framework of a social time regime alien from their personal concrete time-experiences, and their 'inner' time experience of memory, recollection, anticipation, as well as the bodily processes and cycles which make up their concrete lives.

The concept of concrete time under capitalism, I suggest, can further be grasped in terms of human concrete time experiences, practices and (re)productive activities. Michael Lebowitz has pointed out how capital is dependent on human life, and how the reproduction of the latter is an inescapable part of the reproduction of capital itself. While capital reproduces itself through the abstract time of the formation of value, human life reproduces itself through the concrete time of human reproductive practice. Karl Marx had pointed to the crucial importance of the concrete reproduction of the proletariat, although he never got to write the book he had planned on this topic. These processes of human concrete reproduction have been theorized by Lebowitz (2003). Through his work, one can arrive at the crucial recognition of the ongoing pertinence of concrete times even as it is put under the sway of hegemonic abstract time. These concrete times of human reproduction will interest me here as I lay down a conception of capitalist social time relations as a struggling entity between the tendency of the abstract time of value formation and the concrete times of human reproductive practices.

Such a stance differs in at least one fundamental way from Postone's arguments in *Time, Labour and Social Domination*. The historical 'reading back' of capitalist rationality into pre-capitalist settings aside, my idea here differs from Postone with regards to how I understand 'concrete time'. Indeed, while Postone posits the abstract

time of value formation as the dominant time in capitalist societies, he establishes a conflict between the latter and the 'concrete time' of the production of material wealth – as distinct from value. This is rooted, for Postone, in the fundamentally dual character of labour in capitalist societies: while concrete labour produces material wealth, abstract labour produces value. Concrete labour producing material wealth, in Postone's analysis, becomes 'historical time' and propels history forward while the framework of abstract value formation constantly reinstates itself as it is reproduced through capitalist social relations. When changes in the production of material wealth occur, they are quickly, through the capitalist laws of motion, reabsorbed by the objective and independent capitalist value framework, and as such reproduce the very distinction between value and material wealth. Here, I conceive of concrete times not merely as the time of the production of material wealth versus the abstract time of the formation of value. I conceive of concrete times under capitalism as the reproduction of human life, as an inescapable substratum of bodily and human processes which even as capitalist time tends to colonize and subsume them in the logic of value formation, can never completely be subsumed under such a logic. Such a complete subsumption of concrete time under abstract time would indeed signify the end of capitalism, as it fundamentally depends on human life.

The conflict between abstract time and concrete times in capitalism can also be thought of as permeating large aspects of social life. Indeed, it is not only under labour relations at the point of production that abstract time is in conflict with concrete time. Since capitalism inherently drives to colonize more and more spheres of social (socio-natural) processes and practices, human bodies, and personal lives through processes such as commodification and valuation (for example the commodification of art, the privatization of water, the patentification of the human genome, etc), the logic of abstract time also tends to colonize other spheres of human experience, the socio-natural world, and the human body itself. I would like to provide here two examples that point to the pervasiveness of capitalist time and illustrate how the conflict between abstract and concrete times is also articulated in terms of gender and racial exploitation and

oppression. The first case, the time of childbirth, will illustrate one aspect of the gendered nature of capitalist temporal alienation. The second case, the imposition of Western standard time in non-Western settings will illustrate the racialized nature of capitalist temporal alienation. These examples are not meant to essentialize either 'gender' or 'racial' exploitation. In the same way that 'class' involves gender and racial aspects, 'gender' involves class and racial aspects, and 'race' involves class and gender aspects. As such, the example of childbirth is presented as an aspect of gendered temporal alienation, but involves important class and racial elements too. The example of the imposition of Western standard time on non-Western temporal settings also displays forms of gender and class exploitation. The emphasis put on 'gender' and 'race', respectively in each example, is only meant to highlight some specific forms that temporal alienation takes.

The first example I would like to look at here, and which highlights the gendered colonization of human experience, bodies and the socio-natural world by abstract time, is the time of childbirth. Building on Adam's work (1995, pp. 48-52) and other feminist contributions (Leccardi, 1996; Cahill, 2001; Brubaker & Dillaway, 2009), I want to highlight how capitalist social time relations entail specific forms of gender oppression such as the alienation of childbirth time. Here I do not want to counterpose an idealized 'natural' childbirthing experience to a medicalized and alienated experience. Importantly, in the specific case of childbirth, Brubaker and Dillaway (2009) raise our attention to the problem of a dichotomization between 'medicalized' and 'natural' childbirth. In terms of *temporality* of childbirth, however, we can avoid the pitfalls of this dichotomy by focusing on the dialectical processes between concrete and abstract time.

Human reproduction, and more specifically pregnancy and childbirth, is a concrete temporal process which is materialized through various connections between biological, personal and social temporal realities. This concrete process entails a cluster of specific concrete times which come together in the concrete time of pregnancy itself: for example, cycles of menstruation and ovulation, time-patterns of pre-natal processes and experiences, the complex processes of temporal synchronization between the mother's

body and the fetus, hormonal cycles, and many other concrete times of the body and the socio-natural world.¹⁴² Socially, the time of pregnancy, childbirth and childcare has to be adjusted to the requirements of the labour market, the availability or not of maternity or parental leaves *qua* time-extension away from work, the coordination between parents' time, timely social support from fathers, same-sex partners, and other related or close individuals (or absence thereof), etc. There are obviously many variations and each birthing experience is unique and must be considered in social context: for instance, women's decisions during labour do not occur in a social void. As Fox and Worts remind us in the case of childbirth, 'the social relations that shape the birth, especially the amount of support a women receives and can count on receiving, influences decisions that she makes during the course of her labour and delivery, and thus her experience of childbirth' (Fox & Worts, 1999, p. 327).

The experience of pregnancy and childbirth has come under the sway of medicalization – especially in the West – in the era of capitalism and clock-time. *Medicalization*, here, refers to 'a process by which non-medical problems become defined and treated as medical problems, usually in terms of illnesses or disorders' (Conrad, 1992, p. 209).¹⁴³ Heather Cahill (2001) highlights the historical processes by which medicine came to appropriate for itself pregnancy and childbirth, a process which unmistakably displays strong patterns of gender and class oppression. Focusing on Britain, she reminds us of how the growth of a 'medical market' in the 17th and 18th century has led to the medicalization of childbirth and the exclusion of women and midwifery practices from childbirth based on arguments mobilizing ideologized and gender and class-biased concepts of 'scientificity' and 'professionalism' and resting on social conditions characterized by class and gender inequality (Cahill, 2001). While 'until the 17th century in this country [Britain JM], childbirth was firmly located within the domestic arena, an

¹⁴² As Adam points out, each mother-foetus unity is temporally specific, but every case demonstrates time patterns which are common to all pregnancies beyond race, class or culture (Adam, 1995, p. 48).

¹⁴³ See also another definition by Conrad, where he states that medicalization implies that 'a problem is defined in medical terms, described using medical language, understood through the adoption of a medical framework, or "treated" with medical intervention' (Conrad, 2007, p. 5; also quoted in Brubaker & Dillaway 2009).

exclusively female domain' (Cahill, 2001, p. 337), a gender and class war was subsequently waged in Britain in the next two centuries and participated in the overall construction of 'male medical knowledge as scientific and therefore superior to female intuitiveness and experience' (Cahill, 2001, p. 340). These processes led to the severe marginalization of midwifery and the rise of the medicalization of women's bodies, pregnancy and childbirth. As a corollary process, childbirth was progressively spatially relocated inside labour wards in hospitals instead of homes.

Adam helps us highlight the extent to which the abstract time which the medicalization of pregnancy and childbirth as well as the requirements of the labour market have installed over and above the concrete time of pregnancy and childbirth have resulted in the alienation of concrete times. She provides a link between these processes of medicalization and the conflicting times which are involved in the class and gender conflict over the control of pregnancy and childbirth. She quotes the following two passages from Meg Fox in order to highlight the concrete time of childbirth, 'The woman in labour, forced by the intensity of the contractions to turn all her attention to them, loses her ordinary, intimate contact with clock-time' (Fox, 1989, p. 27; quoted in Adam, 1995, p. 48). And then,

For her, time stands still, moments flow together, the past and future do not lie still behind and before her. In place of sequence, and linear relation, there is an overwhelming richness of sensation, which pulls her attention from the outer world. She is immersed in the immediacy of her experience... (Fox, 1989, p. 132; quoted in Adam, 1995, p. 48).

These quotes do highlight how the concrete time experiences of childbirth are at odds with abstract clock-time. The experience of childbirth produces in many cases a disconnection from the experience of clock-time. However, in modern day childbirth practices, conducted almost exclusively in hospitals,

everything is measured against the calendar and the clock: the timing of labour and the length of each stage, the baby's heartbeat and the progress in cervical dilation, the lengths of the contractions and their spacing. The more intrusive the obstetric assistance, the more the woman is forced to oscillate between the all-encompassing body time of her labour and the rational framework of her clock-time environment (Adam, 1995, p. 48).

Indeed, one aspect of the medicalization of childbirth in the context of the spread of a medical market in growingly market-mediated capitalist social relations was the introduction of the clock and abstract timing in the representations and practices of medicalized childbirth. Just as we have seen above that, in the industrial labour process, human bodies, movements and concrete processes had become 'statistical problems', the experience of childbirth has also become increasingly statistical, standard curves and abstract patterns of childbirthing based on criteria derived from clock-time have disembodied the temporality of childbirth to the extent that the concrete time of childbirth has come to be increasingly evaluated against standards of clock-time-units. As a result, the experience of childbirth displays a dynamic of domination and resistance between concrete and abstract time and the logic of power it involves imposes varying experiences of alienation of concrete times 'the degree of clock-time imposition changes the meaning of the birthing situation from a primordial *passage from death-birth to life* on one end of the spectrum to the passive *awaiting of being delivered* of a child on the other end (...) body times are "acculturated" and socialized into the metronomic beat of the clock' (Adam, 1995, pp. 50-51).¹⁴⁴

What this example provides is both an instance of the temporal aspect of social struggle under capitalism, whereas many women have been struggling historically at first to prevent medicalization of childbirth (Cahill, 2001), and since then for the de-medicalization of pregnancy and childbirth. A crucial aspect of this conflict lies in the logic of power at work between abstract and concrete time. Adam relates a conversation she had with Gill Boden, in which she related the following story which does gesture in a strong way at such a 'temporal conflict',

A couple of weeks ago I was involved in a radio programme (Radio Wales) with a consultant obstetrician about Sheila Kitzinger's book *Home Birth* which had just been published. During our chat "off the air" he was at pains to say that he thought that women like me were being a little unfair about obstetricians and that we were attacking a stereotype. I had said that one of the reasons I insisted on a home birth was that I couldn't bear to be timed in labour by doctors anxiously consulting their watches and expecting me to perform to a standard curve. The obstetrician defended himself and said that they did

¹⁴⁴ For Adam, clock-time and 'body time' (or clock-time and multiple other social and natural times) interpenetrate each other in specific ways in specific situations, creating specific time-experiences.

not do that anymore – why, for example, only last week he had allowed a woman to go four hours and three minutes in the second stage of her labour. I raised my eyes to heaven and said that this was exactly the kind of thing I meant and was trying to avoid. He couldn't understand that I wanted to give birth in a space where time seemed unimportant' (Adam, 1995, p. 49, quoting a private communication with Gill Boden in 1993).

Adam is here referring to an instance of women struggling in order to regain the power and the right to give birth at home, a practice which has been severely marginalized, even made illegal in some context, in the process of the medicalization of childbirth. This women's movement toward home childbirth and/or birthing centers is not occurring only in the UK. For instance the recent gains of the women's movement in Quebec for the implementation of midwife-run birthing centers where women can give birth in an environment which is significantly less medicalized, which is empowering, and in which the clock plays a significantly lesser role in the actual monitoring of the birthing process since more emphasis is put on the concrete cycles involved in childbirth over their 'abstract-timing', have been recently successful in obtaining results from the provincial government, such as the implementation of 13 new birthing houses in the coming years.¹⁴⁵

The case of childbirth illustrates the conflict and the logic of power at work between male and commodity-oriented practices of clock-time and concrete personal and social times, and specifically in this case women's time. Capitalist time is alienated time, and the social struggles in the context of capitalist class and gender oppressions do highlight the temporal aspect of domination and resistance.

*

The next illustration I would like to provide in order to broaden the scope of my argument on the alienation of time in capitalist social time relations concerns colonialism and imperialism. The advent of World Standard Time represents a fundamental aspect of Western colonialism and imperialism, and literature tends to recognize that fact, even if

¹⁴⁵ Midwifery was 'legalized' only in 1999 in Quebec. Home childbirth was legalized in 2004. The first birthing center was opened in New York in 1975 and such centers exist now in many countries such as Germany, Switzerland and Austria. Some countries such as France still entertain some sort of legal limbo with regards to midwifery and birthing centers.

sometimes in an understanding not devoid of technological determinism, as in the following quote, 'The rivalry between European powers in the race for colonial and imperial domination depended to a large extent on each country's technological ability to extend and impose its temporal order on the "timeless" and "unchartered" world at large' (Nguyen, 1992, p. 30).

The 'temporal' dimension of colonialism and imperialism is displayed in the dominant ideological conceptions in the West which constructed the non-West as 'timeless', and Western standardized time as 'superior', while non-Western time-systems were deemed 'inferior'.¹⁴⁶ In some instances, it was even argued that the reason why the West was so 'successful' and could impose its worldview and power on the non-Western world lay precisely in the superiority of the Western temporal order, i.e. on its 'rationality' and abstraction, as opposed to the irrational 'concreteness' of non-Western time systems (see Gupta, 1992, p. 192). In this context, conceptions and practices of time were thus central in the representations of the differences between 'self' and 'other' at the basis of colonial, imperial and racist ideologies. As Akhil Gupta puts it in the context of Indian temporality, 'Notions of rebirth, and the concept of cyclicity, rhythmicity, and concreteness, have played a crucial role in orientalist representations of an exotic and inferior Other opposed to the West' (Gupta, 1992, p. 191). The Western, capitalist and male construction and representation of his own superiority was closely tied with the notion of 'abstraction' *qua* 'elevation', and the superiority of abstract time over concrete times,

In moving from concreteness to abstraction, one develops simultaneously along cognitive, moral, intellectual, cultural, and economic dimensions. It is through this play of oppositions, by which the primitive, the rural, children, and women are assimilated, rather than by simple assertion, that the dominance of the West becomes synonymous with the development of the cultivated white male (Gupta, 1992, p. 203).

The colonization of local times and of non-Western time experiences by abstract clock-time is thus also a process which displays the tendency for capitalism to subsume and alienate concrete times under the abstract time involved in the formation of capitalist

¹⁴⁶ Already in the early modern period, clocks were seen as a symbol of European superiority by the contemporaries. See Dohrn-van Rossum (1996, p. 8).

value. Such processes also display the temporal conflict inscribed in capitalist social time relations between abstract and concrete times: just as in the cases of worker's time and women's time, the Western imposition of clock-time on other parts of the world has not gone uncontested.

There is a tendency in the literature to conceive of the hegemony of abstract clock-time or World Standard Time as a progressive one-way process which literally takes over other social time systems. It is undoubtedly true that 'World' Standard Time is indeed 'Western' Standard Time, and that the imposition of clock-time via colonialism and imperialism has sometimes left little of the local non-Western time-systems. In a 1992 article, Nguyen stresses the following,

As gradually all countries began to adopt the time zone system based upon the prime meridian of Greenwich, the specifically Western temporal regime which had emerged with the invention of the clock in medieval Europe became the universal standard of time measurement. Indeed, its hegemonic deployment signified the *irreversible destruction* of all other temporal regimes in the world, the last vestiges of which remain only in the form of historical and anthropological curiosities (Nguyen, 1992, p. 33, my emphasis).

The danger with such one-sided accounts, besides a-socially rooting Western 'power' in the 'invention of the clock', rather than in historically constituted social relations, is that while they rightly highlight the sheer sweeping power of World Standard Time's takeover of the world, they tend to downplay contestation and resistance, and to overlook idiosyncratic social processes in which local social times get colonized by abstract clock-time, but retain features of their concreteness in the face of the march of abstract time. Nguyen's quote, for example, seems to suggest that abstract time is 'alone' in capitalism, and that concrete times have been completely subsumed. The same perils threaten Postone's (1993) arguments (see McNally, 2004). One needs to be careful with such one-sided assertions. Not only do they neglect the continuing relevance of the substratum of concrete times involved in capitalist social time relations, but they also dismiss specific idiosyncrasies which have resulted from the colonization process of non-Western temporal systems by capitalist social time relations. They thus fail to identify capitalist abstract time as a *tendency* emanating from capitalist social time relations in the processes of social valuation. This tendency is no doubt strong and present, and has in

many cases almost completely alienated and subsumed the concreteness of social and personal times under its logic. Nonetheless it can never do so in a complete way, and sometimes the struggle between abstract time and concrete time, especially in non-Western societies, results in idiosyncratic social times which display struggling interpenetrations of abstract and concrete times. Mike Donaldson's superb work (1996) offers us an example of such a struggle between non-capitalist concrete social temporalities and capitalist social time: the process of resistance of Australian Aborigines to abstract clock-time in the context of British imperialism, white settlement, and ongoing processes of domination and resistance.

Donaldson's piece is important in many regards, but mostly because it gives us a concrete historical example of the imposition of capitalist abstract time on a society which did not previously organize itself around abstract time based on processes of capitalist social valuation. Challenging a one-sided account which would present the advent of abstract clock-time as a complete homogenous process devoid of struggle, Donaldson reminds us that

after all capitalism impacted *on* something. It came to living, vibrant, changing social orders, possessed of their own stresses, strains and motive forces. And it came unevenly, affecting different parts in different ways, over different periods of time, with dissimilar results (Donaldson, 1996, pp. 187-8).

Two moments can be highlighted from Donaldson's account of the impact of capitalist social time relations on Aboriginal temporality. First, he delineates the concrete time-system of pre-colonial aboriginal life in Australia. Second, he stresses instances of the struggle between abstract clock-time and aboriginal temporality. In his account, one can read social time relations as a struggling entity, and one can read temporal struggle in the process of colonialism and resistance in Australia. What is more, this example, as Donaldson points out, highlights the possibility of *successful* resistance to clock-time, since it shows Australian Aborigines' 'successful resistance to attempts to dispossess them of the Dreaming, and the continued assertion of their own temporal order against standardized metric time (nevertheless taking from it certain agreeable features)'. In this

context, temporal struggle and *resistance* was 'fundamental to the contestation which defeated British attempts to crush aboriginal culture' (Donaldson, 1996, p. 189).

Pre-colonial Aboriginal temporality in Australia, according to Donaldson, was predicated on socially mediated natural processes, especially the seasons. The cosmology of the Dreaming was a widely shared cultural trait which informed the time systems of many social groups, and this cosmology had organic ties to seasonal cycles.¹⁴⁷ Aboriginals organized their relations with their environment and surrounding ecologies based on a concrete temporality of socially mediated natural processes, especially given their nomadic character: social time was closely tied to cycles predicated on movement across the land and the changing features of food availability and social interactions between groups implied with the changing seasons. As Donaldson puts it,

[Concrete JM] Time was a crucial factor in defining this dynamic relationship between the people and the wide range of ecologies they inhabited. Between the coastal areas, forests, inland river systems and desert, there were substantial differences in the quality, number, availability and variety of potential resources. The utilization of these resources was organized according to the seasonal cycle, in which the range of sequential and circular human movement was a function of the time it took to move across the landscape in relation both to very long periods as well as short intervals (Donaldson, 1996, p. 191).

Such a form of social time relations thus displays a strong relationship to seasonal cycles with which the cultural symbolic time implied in the rituals, practices and representations of the Dreaming were tied up. The Dreaming cycle was the bond linking together locality, season, time, human and non-human.

The concreteness of such a temporal order is displayed in how aboriginal groups attuned their social time to natural processes and mediated these cycles through practical activities which displayed characteristics radically at odds with the repetitive, homogenous and constant character of capitalist labour processes. For example, only on bad days would aboriginals have to work six or seven hours (in terms of Western standard clock-time) in order to meet material needs (Donaldson, 1996, p. 195). Moreover, the

¹⁴⁷ It is important to note that 'Aboriginals' do not form a homogenous group. One should keep in mind the sheer diversity of aboriginal culture. More than 900 different social groups, speaking 200 different languages and occupying 16 major regional spaces were present in Australia at the start of British colonialism (Donaldson, 1996, p. 190).

time of labour was not emptied of other social aspects as it is when it becomes 'labour-time', 'there were no regular alternation of work and leisure, or, more accurately, a non-recognition of that dichotomy. Days were not divided into work and non-work. The Aborigines knew no weekend' (Donaldson, 1996, p. 192).

Telling time, in such a context, was not tied to abstract time-units or abstract-linear measuring systems. Rather, the cycles of the movement of social groups predicated on seasonal cycles made it so that, 'Time, place and people were as one. Time was central to where one was and with whom. One knew the time by the place one was in, and by the company one shared' (Donaldson, 1996, p. 194). Telling time and time-units were thus instances of socially mediated natural processes,

Daily time was marked by daybreak, sunrise, morning, midday, afternoon, late afternoon, sunset, evening and night. Time could be and was counted by sleeps, moons, phases of the moon and by seasons. Seasons were marked by religious ceremony, by temperature, winds and weather; by the appearance and disappearance of particular people and groups of people: the arrival of certain blossoms, plants, insects, birds, fish, animals, each according to their locality (Donaldson, 1996, p. 194).¹⁴⁸

With British colonialism came a very different form of social time predicated on the tendency of abstract clock-time to subsume and alienate concrete times. One of the main sites of struggle between British and Aboriginal cultures was time. British authorities tried to integrate Aborigines into the labour force, with mitigated results, and this was due to a great extent to the unwillingness of Aborigines to submit to the time-discipline patterns entailed by abstract clock-time, 'certainly, Aborigines did not believe in obedience to the clock. To them, time was not a tyrant' (Donaldson, 1996, p. 197). When Aborigines were employed by whites, they incorporated their own time-reckoning conceptions and traditions in wage-labouring practices. In the face of social time regimes imposed by missions and government stations, the Aborigines held on to their own temporal order.

¹⁴⁸ There is no intention here of idealizing or romanticizing non-capitalist social time relations. Furthermore, in this case, it needs to be pointed out that these groups were also traversed by class and gender inequalities. For example, 'time was appropriated by the mature males' (Donaldson, 1996, p. 195). As such social time relations in this context are also a 'struggling entity' with its specific tensions, conflicts and logics of power.

From Donaldson's discussion, it seems possible to infer that market compulsion never quite completely encompassed the strategies of reproduction of Aboriginal peoples. For example, their marginalization in the labour market made them resort to reproductive strategies based on seasonal labour, which allowed the movement of the Dreaming cycle to continue, 'the fruitfulness of the properties on which they worked was safeguarded by incorporating them into the sequential movement of the group across the country, thereby allowing Aboriginal time to be maintained' (Donaldson, 1996, p. 200). Even in instances of more 'complete' proletarianization of Aboriginal groups, their temporalities could be maintained, as the example of Nyungars illustrates,

Nyungar time continued, for the Nyungars were able to retain their close ties with the land and to maintain a collective orientation to wage labour which blurred the distinctions between work and leisure, child and adult tasks and pleasures, and domestic and public production. (Donaldson, 1996, p. 201).

Even in the context of the recent changes in agricultural economy such as the destruction of most of the rural jobs performed by Aborigines and the introduction of more and more energy-intensive production techniques, 'Aboriginal conceptions of time survived (...) especially where ties with the land endured' (Donaldson, 1996, p. 202). The struggle for the reassertion of Aboriginal ties to the land is thus crucial in this regard,

Australian Aborigines prevented the extinction of their temporal order by their resistance to the white work ethic and by the incorporation into their Dreaming cycle of elements of it which enabled them to remain as close as possible to the land for which they hold spiritual responsibility. They maintained, too, where possible, the collective performance of and a task orientation towards work, and a refusal to separate "work time" from "life time". The movement to the homeland centers and the Land Rights Acts of more recent times seem to have assured the further development of their temporal order by strengthening its relations to the land (Donaldson, 1996, p. 203).¹⁴⁹

The recent struggles of Aborigines for their land titles can thus be seen also as an aspect of a process of temporal struggle which has been going on since the start of British colonialism.

This latter example also provides an opportunity to specify the following with regards to 'concrete time'. Concrete time does exist in all of human history, in all of natural history as a matter of fact. But it is not a transhistorical category precisely because

¹⁴⁹ In this passage, Donaldson quotes Murray (1992, p. 14).

the nature of concrete time changes with different social organizations. What I mean here is that the concrete time emanating of the interaction between humans, natural and social processes, are not the same since these interaction change their forms historically. It does not suffice to portray a transhistorical concrete time which progressively comes under the sway of capitalist abstract time at some point. One needs to recognize how capitalist concrete time also differs from pre-capitalist concrete times not the least because of the effects that abstract time has on it.¹⁵⁰ One also needs to recognize how pre-capitalist concrete times might have differed and taken specific forms in different and specific societies.

Let me also take the opportunity here to briefly highlight how the concept of 'subsumption' can relate to time and capitalism. Indeed, another way in which one could describe the relationship between concrete and abstract time under capitalism is through this concept. In his writings on 'primitive accumulation', Karl Marx had talked of formal and real subsumption in order to describe how it was possible for capital to create the conditions for capitalist production while it obviously seemed to take capitalist production to create capital (Marx, 1976). For him, *formal* subsumption occurred when capital attached itself to existing labour processes and compelled the worker to submit to wage-labour. *Real* subsumption, for its part, occurred when capital itself dictated the labour process. In such terms, one could describe the early stages of the formation of a labour market in terms of formal subsumption of labour under capital, and the fully-fledged industrialized labour processes – illustrated in the scientific management of labour – in terms of real subsumption of labour under capital.

One could also very well use these conceptual distinctions when speaking of the hegemony of clock-time over other forms of social time. The formal subsumption of social times by clock-time would then occur at the moment when clock-time comes to dominate other forms of social time through socio-historical processes of the formation of a labour market and capitalist social relations. Real subsumption, for its part, would occur

¹⁵⁰ In the same line of thought, Adam suggests that 'clock-time has not replaced the multiple social, biological and physical sources of time; rather, it has changed the meaning of variable times, temporalities, timings and tempos of bio-cultural origin' (Adam, 1995, p. 25).

when clock-time not only dominates other social times, but when these other social times themselves have to be expressed in terms of clock-time in order to be socially validated at all, for instance when concrete labour-time does not have any social value whatsoever if it is not expressed in abstract clock-time, or when the time of childbirth is itself expressed, standardized, and socially practiced by the medical establishment through the clock-time system.

*

I can now refine what I have in mind when I speak of capitalist social time relations. These relations are composed of two different forms of time: abstract and concrete, which are in a relationship of domination and resistance. Capitalist value formation occurs via abstract clock-time, and as such capitalism displays a ferocious tendency to abstract from the concrete times of human lives and the socio-natural world. I noted, importantly, that such a process is not a one-sided sweep of concrete times, but that the latter remain present for two main reasons: first, as much as capital wants to abstract from the concreteness of human lives and the socio-natural world in order to commodify and 'value' them, it cannot exist without them. Second, concrete times are so central to human reproduction, whereas in labour, sexual reproduction and other fundamental human practices, oppressed groups such as women, workers and racialized groups tend to resist the imposition of abstract clock-time. Concrete times keep their importance in everyday lives: it is often the case, for example, that temporal language expressions, when referring to concrete experience, use concrete temporal frames such as 'at the time when I was living there', or 'when I was a kid', or 'when Robert and Thomas were dating', or 'when my partner was pregnant', etc.

The temporal character of social struggle under capitalism thus points to a process in which capital's temporal order is imposed on and resisted to varying degrees by workers, women and racialized communities around the world. This temporal struggle often goes unnoticed, and time is rarely problematized. Even if it is indeed contested, there is a strong tendency of people in capitalist societies to take capitalist clock-time for granted which might help to explain why this aspect of capitalist domination, although

resisted, is one of the most pervasive and successful system of social domination and control today, why it is often 'taken to be not only our natural experience of time', but also and even more pervasively 'the ethical measure of our very existence' (Nguyen, 1992, p. 29).

G) Addressing alternatives

My discussion here of abstract and concrete times under capitalism might offer an explanation to questions which the recent literature on social time has raised, but not adequately answered. It also differs in many ways from recent contributions which focus on the 'multiplicity' of social time. Indeed, as I mentioned above, it is not enough to *describe* time in capitalism as composed of multiple times, or as opposing dominant and marginalized times. We can, as Adam does, stress the 'multiple' character of capitalist social time over and against clock-time, 'the existence of clock-time, no matter how dominant, does not obliterate the rich sources of local, idiosyncratic and context-dependant time awareness which are rooted in the social and organic rhythms of everyday life' (Adam, 1995, p. 21). At the same time, she stresses the following, which does suggest that there is a conflict at work between what she calls 'commodified time' and various 'open-ended generative times',

Artists, carers and people providing services compete on unequal terms with occupational groups whose work is amenable to translation into the clock-time-units. Such inequality in turns into a major problem where the principle of commodified time has been politically imposed across the board, irrespective of sustainability: where it has been thrust upon business, education and health services, theatre companies and the visual arts community without regard for their unique temporal complexities, and where evaluation is conducted on the basis of commodified time (Adam, 1995, p. 101).

It is not sufficient to say that the 'valorization of speed' differentiates 'commodified' and 'other' times. Such a statement needs more analysis than what Adam problematically states to introduce this argument about speed, 'To be efficient is to produce something or to perform a task in the shortest possible time. To be profitable is to

spend as little money as possible on labour-time. To be competitive is to be faster than your rival' (Adam, 1995, p. 100).

Adam does recognize the dominance of clock-time, the marginalization of 'other' times, and the relationship of these processes to commodification. All of this is correct on its own terms. Where it needs to be amended, is precisely on the nature of the relationship between what I call 'abstract' and 'concrete' time. Although Adam recognizes the role of commodification, her account is situated more at a descriptive level than at the theoretical or historical level. She does not specify the theoretical and historical connection between clock-time and capitalist value. For example, there is hardly a definition of capitalism, or a historical account of the processes involved and the social relations sustaining such a thing as 'abstraction' or 'commodification'. While her conclusions are extremely insightful, my own account here wishes to provide a more thorough specification of the nature of the relationship between abstract and concrete time. Instead of thinking this relationship in terms of 'multiplicity' as does Adam, I suggested we think about it in terms of conflict, tendencies, and social time relations.

It is not enough, either, to point out that clock-time does or does not 'obliterate' other times without explaining the nature of their relationship. One needs to be able to explain *why* some times are dominant while others are marginalized. In this sense, I have shown that capitalist social time relations are a struggling entity and that concrete times tend to be marginalized and alienated *because* of their relationship to the formation of value in a capitalist context. Concrete times might be formative of use-value and concrete experiences, but capitalist value is characterized by a process of abstraction, itself internally related to abstract time-units, which imposes its logic on capitalist social relations and social life. As such, concrete times are marginalized *because* of the dual character of time (and labour) in capitalism. The fact that 'any time that cannot be accorded a money value is consequently suspect and held in low esteem' (Adam, 1995, p. 99) ultimately rests on the process of value formation in capitalist societies.

In the next chapter, I will look at how capitalist time is expressed in cultural forms, more precisely in theories and philosophies of time elaborated in a capitalist

context. But before I do so I would like to take a few pages to address another fundamental contribution to the literature on time, a contribution which I have already quoted, and which I would now like to critically address: Paul Glennie and Nigel Thrift's colossal *Shaping the Day*. This particular effort retraces the history of timekeeping in England and Wales from 1300 to 1800. As seen above, their historical and empirical research work is highly valuable and pertinent to the present study. In this book, the authors enquire into the 'everyday practices of clock-times' in England and Wales over five centuries, focusing mainly on urban centers such as Bristol, but also providing useful data on the spread of clock-time in rural settings. Their work is situated in a different perspective from the one developed here, and I shall highlight those differences and their consequences.

One of Glennie and Thrift's aims in this project is to perform a critique of E.P. Thompson's 'Time, Work-discipline and Industrial Capitalism' article, which they say has been as influential as it is flawed (see also Glennie & Thrift, 1996). In fact, they show inherent antagonism towards the so-called 'standard' account of clock-time which, they write, fundamentally depicts it as an unnatural, omnipotent and oppressive monster, whereas they see clock-time as having been 'as much a liberatory as an oppressive force'. For these scholars, 'everyday' clock-time practices are *not necessarily* disciplinary or oppressive. More precisely, they recognize that there might be a disciplinary aspect to clock-time, but it does not form the pre-eminent basis for everyday clock-time practices (Glennie & Thrift, 2009, p. 182). One should rather be looking at clock-times, they suggest, as they are *immanent* to everyday practices, and not as impositions on them. Accordingly, for them, no singular history of clock-time exists; they propose rather the idea of a cluster of 'complex' histories of clock-times practices, which they seek to illuminate 'episodically'.¹⁵¹ The aim of their project is thus to show the manifold

¹⁵¹ To the extent that I treat capitalist clock-time as a specific form of alienated and reified time being imposed through channels of social power on concrete temporalities, I cannot escape their accusation of treating it as an oppressive force. Secondly, to the extent to which I am not proposing a 'singular history of clock-time' but rather an account of the specific relationship between clock-time and capitalism, I might escape their second accusation.

multiplicity of times and temporal consciousness in contrast to the 'reductionism' that they find inherent in Thompson's and other 'standard' approach.

I want to critically address four specific and interrelated theoretical points in Glennie and Thrift's work. Those four points revolve around the questions of a) theoretical framework, b) the oppressive character of clock-time, c) the notion of episodic history, and d) the definition of clock-time.

a) 'Theory or not theory'

In terms of theoretical framework, what's at stake here is pretty straightforward. What Glennie and Thrift are doing is a very legitimate reading of their empirical data according to their theoretical and methodological commitments to a variant of 'postmodern' social theory. Accordingly, the contradictions inherent in most of these approaches, between a (potentially healthy) suspicion toward all-encompassing theoretical narratives on the one hand, and indeed a very dense and profoundly pervasive theoretical language and apparatus on the other, are reflected in their work. An illustration of this tension is found when they argue that Thompson's work is discredited by 'novel' theoretical 'innovations', which would suggest that they do take theory seriously. But then, they re-assure us that they do not aim at 'replacing one theoretical orrery by another', they do not want to 'provide some overarching theoretical framework that can become a new standard' (Glennie & Thrift, 2009, p. 19). They push this a-theoretical logic to the point of stating, rather naively, that 'at all points, we have tried to let the historical record (such as it is) speak' (Glennie & Thrift, 2009, p. 19), unaware of - or insensitive to - the ideological weight that 'bare historical facts' might carry with them. Then, in a reversal of perspectives coming later in the book, they change the tone once again, as they can't keep the looming pervasiveness of their own theoretical commitments from creeping back in, 'we do not want to see our work presented as simply a series of partial empirical excursions which have no larger significance. Therefore, in this section, we begin to work towards an account which synthesizes our research into a more general model (...) which we think traces out a series of important revolutions in timekeeping

practices' (Glennie & Thrift, 2009, p. 93). Behind the suspicious and dismissive tone towards 'outdated' theoretical frameworks and a 'commitment' to letting the data 'speak as it is', lurks nonetheless a strong set of theoretical commitments which can't (and shouldn't) be hidden behind naïve a-theoretical claims.

Here is not the place or time to perform a detailed critique of Michel Serres' or Bruno Latour's work.¹⁵² I will simply point to some theoretical shortcomings of the theoretical outlook they have championed *as it is used in Glennie and Thrift's work*. Glennie and Thrift argue that theoretical approaches that merely 'socialize' technology in order to avoid technological determinism are 'outdated', since they rely on a false separation of society and technique. Such social approaches sin by 'social determinism' (Glennie & Thrift, 2009, p. 43). First, it might be noted here that the way that these approaches are deemed outdated implies some kind of 'progress' in the social sciences, which is a dubious stance for a work that is avowedly post-positivist. Second, it is hard to see how they can reach the conclusion that 'socializing technology', like some critical variants of historical materialism do, amounts to dichotomizing society and technique. In any case Marx himself, in his critique of classical political economy, stressed not the *dichotomy*, but the *inseparability* between society and technique, and underlined that what classical political economy treated as 'technical factors' are in fact 'social factors'.

In order to avoid this dichotomy, Glennie and Thrift rely heavily on 'actor-network theory' which proposes, among other things, to re-consider the role of objects in 'actor-networks', most notably by ascribing 'partial agency' to them. Such a perspective approaches the world as 'made up of diverse actor-networks which are more or less successful attempts to associate, mobilize, and then make durable human-nonhuman alliances' (Glennie & Thrift, 2009, p. 73). Implied in actor-network theory is on the one hand a salutary recognition of the complex interactions between materiality and meaning, but also, on the other hand, the fetishist attribution of a power of agency to objects, 'actor-network theory sets great store by the role of objects in the world: objects that are

¹⁵² Some of Serres' and Latour's most interesting ideas, for instance the idea of 'folded' temporalities meeting each other in human actions, are not explored in this work by Glennie and Thrift. I have proposed a slightly different version of 'folded' temporalities above.

no longer passive. As crucial elements of actants, they have their own partial agency' (Glennie & Thrift, 2009, p. 73). In actor-networks, devices are not mere objects, but fundamental participants, 'actants', in the network itself; the collective agency of networks is mediated through the objects, or 'devices' which form part of it. So much the better, but a fundamental aspect of these 'objects' and 'devices', namely that they are, in a capitalist setting, fundamentally commodities, escapes the analytical framework. What I mean here is the very simple following point: objects are not indifferent to the social-property relations in which their existence is embedded. Under capitalism, for instance, most objects (including clocks) are commodities. What is lost in the consideration of the agency of objects, is that these 'devices' already congeal social relations of exploitation and appropriation, that 'hidden' in these objects is the secret of the social reproduction of capitalist societies, the form of social relations and value, and the shaping force of human reified interactions in a capitalist context. Behind the 'partial agency' of these objects, behind the relationship between humans and these objects, lie relationships between humans. These 'devices' are integrated in 'networks of practices', but their very social origin and social form are silenced. The agency of labouring human beings is lost in this fetishized objectal-agency. As such, Glennie and Thrift constantly take the risk of replicating what Marx had termed 'the fetishism of commodities', in which social relationships between people appear as relationships between things.

Furthermore, the concept of 'communities of practice', which they mobilize in order to refer to clusters of agents, knowledges and practices in complex social interactions, seems to be able to explain two opposite outcomes in the very first mention they make of it. In the case of Galileo, we are told that his observation of the moons of Jupiter were diffused rapidly (a matter of a few months) in the astronomical 'community of practice', while the Italian physicist did not seem to be aware of Tyco Brahe's geoheliocentric system. The specialized network formed by the community of practice is supposed to explain the diffusion of ideas, knowledge and technique, but the same specialized network can both have a very rapid and very slow rate of diffusion at the same time, 'So ideas, did not always spread very far, or very fast, even when present in a

specialized network' (Glennie & Thrift, 2009, p. 6). Perhaps the determining factor in the diffusion of ideas, at least in this case, is not the specialized network, but some other *explanans* or context that would help us understand why some ideas travel and some don't in the same community of practice. When they try to explain the fact that Galileo did not know about Brahe's system, they posit that it is because the communities had 'pronounced geographies' seemingly not noticing that they had pronounced geographies for Galileo's discovery of Jupiter's moons too (Glennie & Thrift, 2009, pp. 6-7). The question here is, then, what does the mobilization of the concept of 'community of practice' actually *explain*? It seems to be more a descriptive than an explanatory concept in any case.

It is clear that Glennie and Thrift's book is as 'theoretical' as any other in the field, no matter how theoretical commitments are hidden behind a suspicious attitude towards 'Theory'. When they say that it is 'innovations' and 'new ways of thinking' that discredit Thompson's work as reductionist, they not only seem to misread Thompson and historical materialism, they also put forward an 'alternative' which has its own pitfalls and flaws, most notably the above-mentioned looming fetishist treatment of objects, and the use of *explanans* with rather vague explanatory power. For all the qualities and sophistication of their work, the fact remains that it does not represent a once-and-for-all relegation of other perspectives to the limbo of an outdated historiographical 'past'; their work is merely the result of the application of a different (and flawed) theory and methodology to the empirical data.

b) The oppressive character of clock-time

For Glennie and Thrift, clock-times *emerge* from everyday practices, instead of being related to specific social developments producing and reproducing various forms of social power with specific characteristics of abstraction and impersonality. Everyday practices, in themselves, spontaneously generate and use, clock-time (Glennie & Thrift, 2009, p. 261). Accordingly, there is not necessarily imposition, opposition, or struggles involved, as clock-times become 'integral elements of everyday lives, social relations,

and localities (...) whether or not people were subject to explicit disciplinary impulses to explicit clock timekeeping' (Glennie & Thrift, 2009, p. 411). As such, Glennie and Thrift spend much energy criticizing the narrative of the 'triumph of clock-time'. In doing so, they lump together disparate figures such as Marx, Spengler and Heidegger (2009, pp. 48-9), for whom clock-time is 'homogenous', 'inauthentic' and/or 'oppressive', and they counterpose to these 'homogenous views' their own notion of a 'multiplicity' of times. They refer to their object of study as clock-times, and they argue that these are not dominant, nor solely oppressive, but rather merely 'general' (Glennie & Thrift, 2009, pp. 16, 96). In their own words, they seek 'to build an alternative account of clock-time as a series of practices that have become general, but not necessarily ascendant' (Glennie & Thrift, 2009, p. 65). The danger involved here is not only of a theoretical nature, i.e. to misunderstand the relationship between clock-time and forms of social *power*. The danger is also, politically, to prevent the development of critical attitudes and practices towards clock-time on the basis that its oppressive character would not be recognized, or would be water-downed through a lack of explanation for the 'generalization' of clock-time in terms of social conflict and social power. Here, I tend to agree with David Harvey when he points out that the class, gender, cultural, religious and political differentiation in conceptions of time and space 'frequently become arenas of social conflict', and when he adds that 'concepts of space and time and the practices associated with them are far from socially neutral in human affairs' (Harvey, 1990, pp. 420, 424).

Glennie and Thrift's wish to point towards 'other' temporalities might be a critical gesture in itself. However if the oppressive character of what 'others' these temporalities in the first place is washed away, silenced, erased behind a somehow neutral 'generality', the critical edge of the account might get lost. A real gesture of openness towards 'otherness' cannot do away with critically engaging with oppressive forces. Recognizing the totalizing logic of capitalist clock-time does not necessarily entail a radical 'othering' of different temporalities: it rather points critically at, as well as denounces, the 'othering' in the first place. It points at the oppression of 'other' temporalities in real social life under the colonizing logic of capitalist social time relations. If only one example is

needed to show how this totalizing process is a *real* process in the case of capitalist social time relations; one should only look to the development of World Standard Time. It seems to me rather difficult to *not* recognize such a global social development as a product of *totalizing* tendencies. The point here is precisely that complex histories of complex and manifold practices have been, and still are, under the attack of the totalizing logic of capital.

Despite their focus on the diverse non-oppressive multiplicities of clock-times, the totalizing and oppressive logic of capitalist time is still symptomatically present in Glennie and Thrift's own work. For instance, when they point to the multiplicity of various cultural attitudes towards time, they more often than not underline, perhaps in spite of their argument, cultural *resistance* to clock-time discipline. For instance, they quote from literature which stresses the particularities of temporal awareness in different cultures (see for instance the literature referred to in Glennie & Thrift, 2009, pp. 89-90). The point which they do not seem to notice, though, is how the narrative of these studies is often constructed in *opposition* to clock-time. In other words: where they point to 'multiplicity', they often also point at 'resistance'. For example, these studies often highlight how haste, or some other temporal attitude related to clock-time discipline, is socially awkward in several cultures, and so on. Cultural attitudes toward time are described in differentiation from, and often in opposition to, capitalist social time relations; they often elaborate cultural attitudinal strategies of resistance to clock-time. This suggests, I would argue, that clock-time is indeed something like a force being imposed on people and peoples and *resisted*; resisting something that is not *oppressive* in the first place would seem to make little sense.

Furthermore along those lines, according to Glennie and Thrift, questions of 'how contemporaries understood the signals that communicated clock time are of considerable interest, but are remarkably difficult to answer' (Glennie & Thrift, 2009, p. 235). Does this suggest that it is 'difficult' to recognize that in many historical instances, clock-time has been understood as an oppressive force?

The present account has shown that such oppositions to clock-time have in fact existed in conceptions and practices of time, for instance in the popular medieval culture's processual concrete time, which was antagonistic to official times. The very nature of capitalist social time relations implies resistance. Let me just note here in passing one historical instance not only of 'resistance', but of sheer *revolt* against dominating time-forms. Even if Glennie and Thrift argue that 'all classes of people' practiced and used clock-times from as early as the 15th century, I might point out that as 'late' as July 1830, in revolutionary Paris, the rebellious people of the capital attacked, independently and simultaneously, clock-towers all over the city. They knew, so it seems, whose interests clock-time served, they felt the uniformization of social temporalities under clock-time as an oppressive process, a target for revolutionary violence. As Benjamin relates Barthélémy and Méry's poetic account of these events,

Who would believe it! It is said that, incensed at the hour, / Latter-days Joshuas, at the foot of every clocktower, / were firing on clock faces to make the day stand still. (...) This is a unique feature in the history of the insurrection: it is the only act of vandalism carried out by the people against public monuments (...) What was most singular about this episode was that it was observed, at the very same hour, in different parts of the city. This was the expression not of an aberrant notion, an isolated whim, but a widespread, nearly general sentiment (Benjamin, 1999, p. 737).

Now, such a 'widespread, nearly general sentiment' *against* clock-time, which was translated in the actual attack by gunfire on 'public' monuments, might suggest that it was, at least in such circumstances, indeed experienced as an oppressive force by these people.

In the same line of thought, we might note Jeremy Rifkin's insistence on the fundamentally *conflict*-ridden nature of social time. As he depicts environmental, biological agriculture, holistic health, eco-feminist, bioregionalist and economic democratic movements, among others, as today's 'time-rebels' (Rifkin, 1987, p. 13), Rifkin also points out that social time is inherently a question of social power, that social forms of time-reckoning such as calendars and clocks have historically been used 'to bind the human community to the dictates of those on top of the social ladder' (1987, p. 14). Glennie and Thrift's idea that clock-time is a 'generalized' practice, and not necessarily an oppressive one, would not fare very well in the face of Rifkin's depiction of the

'explosive' workers' resistance to the imposition of capitalist time-discipline in the period of industrialization (1987, p. 30).

Of course, Glennie and Thrift's point that popular practices *also reproduce and even embrace* clock-time is well taken, but the silencing of instances of struggle against clock-time discipline is historically, theoretically and politically disturbing. People are oppressed by capitalist social time relations even if it so happens that people make use of clock-time in apparently non-problematic ways. What I have said in chapter I about 'determination' also applies to how I conceive of 'oppression'. 'Oppression', like 'determination' does not refer to a strict and inescapable set of constraints which affect people. Oppression is delineated through a series of limits and pressures on human individual and collective agency, narrowing the array of possibilities for social actions, behaviours and agencies. Humans cope with and resist oppression: human agency pushes those limits back and forth. Temporal oppression does not always appear distinctly as oppression, in fact it is one of the most subtle forms of oppression: social time regimes in today's societies hardly need the threat of physical violence or the presence of the army in the streets to function effectively, and yet everyone is subject to it and must conform to its dictates in order to function in society, and, in many cases, in order to survive.

c) The notion of episodic history

The inability of Glennie and Thrift to actually identify the totalizing and oppressive logic of capitalist clock-time is partly based on their theoretical *apriori* commitment to 'multiplicity', 'fragmentation' and 'complexity', which water-downs not only theoretical precision but also potential political action. Their 'fragmented' narrative cannot do justice to how temporalities are parts of the social whole. Lost in the manifold determinations of time sense, they fail to grasp the relationship between these multiple determinations and the totalizing logic which stems from social time relations under capitalism. So much so that they cannot identify the logic behind their own account of the 'complex histories' of clock-times (Glennie & Thrift, 2009, p. 23). 'Mature' clock-time for them is a manifold cluster of complexly evolved sets of everyday practices, but they

fail to explain why such a cluster has historically evolved, what 'logic' lies behind the 'maturation' of clock-time into what it has indeed historically become. As a result of their reliance on fragmentation and complexity, they argue that 'no singular history of clock-time exists' (Glennie & Thrift, 2009, p. 14). Implied in that statement is the relinquishment and abandonment of any form of meaningful integrated historical narrative. Their 'episodic history' leaves us with a statement that defies any attempt to *make historical sense* of the history of clock-time, 'Modern, 'obviously right', elements of clocks and hour systems came about through extended processes of experimentation, selection, influence, and pure chance, rather than as inevitable consequences of some intrinsically superior "design"' (Glennie & Thrift, 2009, p. 28). If Glennie and Thrift leave us with a choice between the equally mystical notions of 'pure chance' and 'superior design' to explain the history of clock-time, we are indeed left facing a false problem. Historical logic *and* contingency play a role in human history. As such, I would rather take my 'chances' on trying to identify some sort of social driving force, not the equally mystical notions of 'pure chance' and 'superior design', but a real, and identifiable, 'socio-historical process' in which 'experimentation, selection and influence' actually took place, and which might have gone through contingent processes.

The consequences of Glennie and Thrift's dedication to a conceptual architecture predicated on notions such as 'complexity' are not merely theoretical, but also political. In a word: it becomes impossible to challenge effectively the logic of domination and oppression stemming from capitalist social time relations if one can't recognize in them a logic of domination and resistance. 'Complexity', as Slavoj Žižek has pointed out, is, more often than not, not only a capitulation of theoretical defeat, since it prevents any attempt to understand what is in any case too complex, but a symptom of (a-)political passivism, a 'deliverance from the responsibility to act' (Žižek, 1994, p. 5), since it becomes difficult, to say the least, to effectively politically challenge, let alone change, something that is in any case too complex to be understood. Accordingly, one should be able to recognize complexity without letting go of the possibility of identifying key determinations of the social whole in order to be able to change it.

Glennie and Thrift raise a crucial point when they establish the problematic character of "linear narratives", in their associat[ion] with absolute dating systems which are themselves historically and culturally specific artefacts arising in part from the spread of a particular form of clock time' (Glennie & Thrift, 2009, p. 59). They are referring here to the prevalent dating system of successive centuries, BC/AD, which is, as they point out, a relatively recent social construction. I have, to some extent, followed their insight in mentioning the Gregorian calendar and the Christian era as parts of the contemporary form of clock-time. Yet, it needs to be pointed out that historical materialism as I understand it does not insert history in a pre-fixed and abstract periodic frame, an 'absolute' timeline. Rather, the historical materialist periodization of history is predicated on the nature of the historical *content* of human experience, by the nature and form of real social relations and dynamics of domination and resistance. The focus is on the concrete historical *process*, and on how the historical content of the practices of social reproduction can be amalgamated into a coherent ensemble of social-property relations. These, based on historical content, interaction, and form, are then used as categories for historical periodization. While Glennie and Thrift praise Latour, Proust and Whitehead for identifying *process* as the most concrete historical entity, and posit this idea as a new historicist or postmodern innovation, the long tradition of critical historical materialism has understood *process* in this historical concrete sense since Marx (on process see also E. Wood, 1995, pp. 76-107).

Against the idea of the maturation of clock-time as a matter of 'pure chance', or complex and multiple social practices that become impossible to disentangle and condemn us to an episodic history, among other things, I have related 'mature' clock-time with fundamental characteristics of the 'laws of motion' of capitalism. I did not so much argue that some 'superior' design shaped clock-time, but that the logic of capitalist accumulation as a socio-historical process drove for a universalization of its time frame, making clock-time socially hegemonic in capitalist social time relations. I was thus able, in contrast to Glennie and Thrift, to explain why the historical and social diversity of multiple time-senses has been under attack by 'abstract clock-time'.

While Glennie and Thrift, by their own admission, end up threading a historiographical fabric that resembles more a fishing net than a tapestry, a historical materialist outlook allows for a tightening up of the net, in order to keep historical meaning from escaping through its holes.

d) Definition of clock time.

Glennie and Thrift give a 'sociological' definition of time as 'a resolutely material and mundane set of procedures and practices of aggregation' (2009, p. 13). While their definition of time is close to what Elias has formulated, their definition of 'clock-times' might inform the differences I have identified between their account and mine.

As David Landes has pointed out, a lot of historical controversies around the history of time-keeping have to do with the terminological and technological definitions that are actually being used, both by scholars and in the historical data. Different definitions of a clock, for example, will probably lead to different histories of it (Landes, 1983; see also Dohrn-van Rossum, 1996, pp. 52-4). In this sense, a fair amount of the divergence that is found between my account and Glennie and Thrift's is based on differing definitions of clock-time(s). The commitment they show towards multiplicity, fragmentation, complexity, episodic history, and so on, indeed supports a definition of clock-times that is loose, in terms of analytical rigour.

An illustration of the 'looseness' of their definition of clock-times is found in the fact that while they 'take devices seriously' as parts of actor-networks, they do not systematically take into account the different time-senses conveyed by – and through – different instruments. This stems in part from a failure to specify what social relations of power are embodied in such instruments. The questions of who's timing what, for what purposes, from which class, gender or racial position, is not taken seriously beyond the actual immanent practices that they find in their archival work. Accordingly, a very impressive range of practices and instruments are lumped together as 'clock-times', and the fact that these different devices might convey different *time-senses* is not taken into

account,¹⁵³ whereas, for example, I noted in chapter II that urban bells and work bells might have conveyed different temporal meanings and experiences. As a result, various devices and various operations that might have been experienced differently and embedded in different temporal relations, are indiscriminately treated as clocks:

we conceive of clocks as networks involving not only timekeeping devices themselves (the mechanical clocks and other objects used to in keeping track of times of day), but also both signalling devices (clock-bells, chimes, dials and so forth'), and the personnel associated with timekeeping and signalling' (Glennie & Thrift, 2009, p. 136).

Time-signalling, time-keeping and time-measuring, all tend to be blended in a loose understanding of 'clock-times', to the extent that any time-cue, including the crowing of a rooster, or a neighbour going out, might be included in their account as part of 'clock-times' (Glennie & Thrift, 2009, pp. 85-6). Their definition of clock-times is probably closer to a definition of *time-marking*, and that might be why for them clock-times do not necessarily involve clocks (Glennie & Thrift, 2009, p. 18). Clocks and time-markers are not distinguished in their account since 'the spread of clocks, the use of clocks to keep equal hour time, and the use of time-marker to structure daily life were all intertwined. We cannot see one of these as determining the others, whichever way we point the causal arrow' (Glennie & Thrift, 2009, p. 26). Accordingly, they tend to mix together bells, rooster, clepsydras and clocks (while they maintain they take devices seriously) in one big 'network of practice' called 'clock-times' (see for example Glennie & Thrift, 2009, p. 85). But the time of time-marking is not necessarily the time of clock-time, as seen in the example of the different temporal experiences conveyed by work bells in comparison to other town bells. Abstract and concrete temporalities, or evenemential and constant time signalling, are not differentiated in their account, and the crucial qualitative change between pre-capitalist clock-time and capitalist clock-time cannot be grasped. In terms of the conceptual precisions that I had highlighted above, capitalist clock-time differs from pre-capitalist clock-time. For example, while clock-time, as mentioned earlier, quantifies time frames into abstract time-units; measures, regulates and

¹⁵³ They do not seem to want to push the insight that they got from their observation that some bells signals and clock-time might have manifested a difference between practical and abstract signals (Glennie & Thrift, 2009, p. 37).

control temporality; rationalizes timing; evens out time patterns and controls time sequences, capitalist clock-time also increases, maximizes and optimizes tempo, extends and commodifies time-points, and systematically invests in time extensions.

I shall now turn, in chapter IV, to philosophical forms of cultural mediations of capitalist social time relations. Such an enquiry, based on what precedes, will also lead me to further distinctions between non-capitalist social time relations and capitalist social time relations, and to more precision as to the forms of alienation and non-alienation of time brought about by different social time relations and regimes.

Chapter IV: Cultural mediations and conceptions of time in context.

- A) Introducing remarks
- B) Romantic realism and alien nature
- C) Philosophies of time, a reading of Aristotle, Augustine, Husserl, Heidegger and Bergson in context.

A) Introducing remarks

This chapter enquires into conceptions of time. I focus especially on philosophies of time in a capitalist context, but I also make historical comparisons. As discussed in the previous chapters, the rise of clock-time to a position of hegemony in social time relations is related to the development of capitalism and its form of social valuation. The commodification of human labour is a key component of this process. As a result of this process of commodification of human labour which would culminate in capitalist industrialization, the increasing mediation of social relations through market imperatives gave rise to a massive cultural change in the conceptions and practices of time. As abstract clock-time colonized social time relations, as abstract time-units increasingly became the formative measure of social value, the fundamental relation between humans and time was greatly affected.

E.P. Thompson's seminal article 'Time, Work-discipline and Industrial Capitalism' (1993) provides a historical overview of some of the consequences of industrialization on social time relations in England. In this article, Thompson sought to show that the changing nature of time-discipline in that period was not the result of a narrowly understood relationship between manufacturing techniques and time-disciplines, but that it entailed broader and more profound *cultural* changes. In other words, one can stress the theoretical and historical relationship between the commodification of labour and the form of social time relations, but one might also want to enquire into the ways in which this relationship is culturally mediated in the lived experience of women and men.

Focusing on the spread of clock-time, Thompson puts his research question in those terms,

how far, and in what ways, did this shift in time-sense affect labour-discipline, and how far did it influence the inward apprehension of time of working people? If the transition to mature industrial society entailed a severe restructuring of working habits – new disciplines, new incentives, and a new human nature upon which these incentives could bite effectively – how far is this related to changes in the inward notation of time? (Thompson, 1993, p. 354).

In other words, Thompson does not establish a one-on-one mechanical relationship between the ‘temporal-disciplinary requirements’ of emerging industrial capitalism and the spread of clock-time as a ‘time-disciplining’ social phenomenon. What he is pointing to, rather, are the cultural mediations between the two; how cultural phenomena, such as Puritanism on the one hand and ‘Saint Monday’ on the other, to take two of his examples, mediated the relationship between the time-discipline of industrial working practices under emerging industrial capitalism and living subjects’ intimate apprehension of time.

One could thus enquire into cultural phenomena in order to find expressions and mediations of changing and consolidating new forms of social time relations: as Thompson puts it, ‘the stress of the transition [to capitalist industrialism JM] falls upon the whole culture: resistance to change and assent to change arise from the whole culture’ (Thompson, 1993, p. 382).

One of the major oppositions that Thompson develops in his article is between ‘task-oriented time’ and ‘clock-time’. As I have suggested in chapter II, one might want to replace a too broad conception of ‘task-oriented time’, allegedly encompassing the bulk of peasant’s conceptions and organization of time in global history, with the term *processual concrete time*, which is more precisely related to peasant practices and popular culture in medieval Europe.¹⁵⁴ As I have argued above, it is this conception that is opposed to the abstract temporality of clock-time. The shift that Thompson points at here, between ‘task-oriented time’ and ‘clock-time’, might be better described in the European

¹⁵⁴ See, among others, Smith’s (1986) nuances with regards to ‘task oriented time’ in Japanese Tokugawa peasant communities.

context as a shift in the dominant form of the time of labour between processual concrete time and abstract clock time, occurring in relationship to a broader shift from pre-capitalist social time relations to capitalist social time relations. One hint of this, as we will see below, is that the conceptions of time associated with some episodic rebirths of popular realism, such as romanticism centuries later, are drastically altered: the generally alienated character of nature in romanticism testifies to a parallel change in cultural apprehension of temporality: the processual concrete time of medieval grotesque realism has *vanished* (Bakhtin, 1984, pp. 36-45). The relative spread of clock-time in pre-capitalist contexts configures a temporal infrastructure which will come to be subsumed under capitalist value and temporal alienation. Importantly, the rise of clock-time to a hegemonic position in capitalist social time relations is a *process* which is as much occurring at the level of socio-material time relations as at the level of people's 'inward apprehension of time'. Social time relations as a struggling entity in process were profoundly altered with the rise of clock-time to hegemony, which was both imposed externally and also internalized by agents through the dynamic of domination and resistance. For example, in the context of English industrial work relations,

The first generation of factory workers were taught by their masters the importance of time; the second generation formed their short-term committees in the ten-hour movement; the third generation struck for overtime or time and a-half. They had accepted the categories of their employers and learned to fight back within them. They had learned their lesson, that time is money, only too well (Thompson, 1993, p. 390).

One social process to look at in order to identify the socio-economic roots of such an alienation of time does not go unnoticed in Thompson's account. As I have already pointed out in the case of medieval wage-labouring practices and the struggles over time that they produced, alienated and commodified time for Thompson emerges from the employment of labour:

Those who are employed experience a distinction between their employer's time and their "own" time. And the employer must use the time of his labour, and see it is not wasted: not the task but the value of time when reduced to money is dominant. Time is now currency: it is not passed but spent (Thompson, 1993, p. 359).

For Thompson, there is thus a fundamental shift in social temporalities 'as soon as actual hands are employed', and he goes on to trace the cultural mediation of clock-time and the processes he associates with its 'internalization' by agents. However, he does not specify that it is the very fusion of labour and abstract time under capitalist social relations which founds alienated time, while the 'employment of actual hands' in other socio-historical contexts did not lead to a *systemic* alienation of time.

Just as Thompson had wanted to enquire into the cultural phenomena through which the relationship between clock-time and capitalist value had been mediated at the dawn of the Industrial Revolution, we might here note that the relationship between humans and abstract time-units has been mediated through a series of long-term cultural changes with regards to the culture of time. These processes, and this social reorganization of time, were not an ephemeral phenomenon, or a once-and-for-all shift, but rather endured from the dawn of the Industrial Revolution all the way to the first decades of the 20th Century and beyond. Capital continues to revolutionize human productive activities and reproduce temporal alienation, as such social time relations continue to be predicated on such alienation. Conceptions of time thus tend to exhibit traces, as well as participate in the reproduction, of this phenomenon. I am particularly interested here in philosophies of time as they are articulated in the period of the consolidation of World Standard Time: these will be my main focus in this chapter.

*

As discussed above, in the period in which capitalist industrialization came to exert its sway over human labour and concrete times, social time relations were altered. The rise of 'World Standard Time' should be read as a process of diffusion, consolidation, and penetration of alienated social time relations. Indeed, it was an expression of the materially embodied diffusion of a form of social time relation, abstract clock-time, to most of the world, as well as a symptom of capitalist penetration and homogenization of social time relations in the process of bringing abstract clock-time to social, or 'public', dominance in the capitalist world. In this period, momentous cultural changes in the lived - and thought - experiences of time occurred.

Stephen Kern, in his *The Culture of Space and Time*, provides an account of some of these cultural changes. Kern's study focuses on the period from around 1880 to the outbreak of World War I, in which 'a series of sweeping changes in technology and culture created distinctive new modes of thinking about and experiencing time and space' (Kern, 1983, p. 1). While the technological changes referred to are inscribed in industrial capitalism's drive for technological innovation, Kern's purpose is not to explain the causes of such a change in the material foundations of life. He focuses instead on the cultural history of the age. Accordingly, while he focuses on changes in technology and culture, it is my contention that one can relate those changes with broader social transformations which include processes such as commodification and reification, themselves linked with the processual coming to dominance of capitalist processes of value formation and their time-form.

During the period from the middle of the 19th century through the first decades of the 20th, which forms the 'heyday' of industrial capitalism in the West, there is indeed an outburst of cultural,¹⁵⁵ philosophical and scientific investigations of time. The field of philosophy, for one, produces penetrating insights on the question of time, notably in the works of Henri Bergson, Edmund Husserl and Martin Heidegger, to which I will give some attention in this chapter. The common feature in these philosophical works of the period resides in the radical separation of subjective, experiential time, from 'worldly' or 'public' time, the former becoming the main object of enquiry, often in opposition to the latter. This chapter will enquire into such philosophical conceptions of time as diverse moments of expression and forms of mediation of temporal alienation.

Indeed, one of the most prominent features of the philosophical ethos found in this period is the dichotomization between what Kern calls, following Bergson and other figures of the period, 'public' and 'private' time. Abstract, homogenous and alienated time, the time of clock-time which is installed out-there in the world as a new universal form of social time relation, the World Standard Time, is radically separated from the

¹⁵⁵ In literature, Proust places the problem of time at the center of his novels, while Joyce's writings display a concern for it. In painting, cubism can also be analyzed from the perspective of time. For a discussion of Proust, Joyce, cubism and other forms of artistic expressions of the changes in apprehensions of time in that period, see Kern (1983).

time of human experience, especially the time of the mind, the time of memory, recollection, meaning and anticipation. Using Kern's discussion, as well as further enquiries into the philosophical literature on time from the late 19th and early 20th century as stepping stones, I want to posit that the evolving context of capitalist social time relations forms the socio-historical matrix in which the cultural transformations of the relationship between humans and time are inscribed. Indeed, when one looks at the major cultural, philosophical and scientific trends and the way in which time is represented as a cultural form in this period, one finds a formal imagery that depicts, expresses, resists or denounces temporal alienation as it is lived by agents. As Nguyen puts it,

the transformation of the measurement of time from a material record of the human experience of duration in terms of cosmological or organic cycles to an abstract system of mathematical units devoid of physical references meant that an *apparently irremediable breach* had emerged between the human definition of time and the lived experience of temporality (Nguyen, 1992, p. 34, my emphasis).

The discussions of time by philosophers such as Husserl, Heidegger and Bergson provide a way to engage with cultural mediations of temporal alienation. Importantly, I am not examining those contributions in order to assess if they are 'true' or not, correct or incorrect, comprehensive or incomplete, and so on. Neither do I have the pretention of offering a comprehensive study of their philosophical systems as a whole. I am focusing only on aspects of their conceptions of time as forms of expression and mediations of a specific form of social time relations. In other words, I do not claim to offer an exhaustive textual discussion of these philosophers' systems or conceptions of time, rather, I want to indicate the insights that can be gleaned from a socio-historical reading of their treatment of time and temporality.

It is important to note that the traces of temporal alienation present in such cultural forms, most notably in the dichotomization between public and private time that they exhibit, differs in specific ways from pre-capitalist discussions of time. In the next few pages I would like to point out some specificities of conceptions of time which are rooted in temporal alienation. These conceptions appear to me as expressing a specific contradiction between the *alienating tendencies* of capitalist social time relations and

inner subjective experiences of concrete times. Through reflection on the internalization of alien time, it comes to appear as an independent, oppressive, unnatural and alien object. The three philosophers examined here end up adopting a critical stance on public time, and denouncing its internalization by human beings, not only on philosophical grounds, but also often on ethical grounds. In short, once the alien object of clock-time comes back to determine time-senses, there is a clash between its abstract and alienated form and the subjective experiences of concrete times. The time of the world, colonized and expressed by and through clock-time, does not appear as *our* time.

I have argued that this process of temporal alienation and reification is related to the fusion between human labour and abstract clock-time-units and its effects in capitalist social time relations. While social time regimes had already, prior to the capitalist period *per se*, produced conceptions of time which could display characteristics of abstraction and/or temporal domination, social time relations were not characterized by a systematic tendency to alienate time, since they remained predicated on forms of human reproductive practices which were not fused with abstract time-units.

As such, pre-capitalist conceptions of time generally express some form of unity between humans and nature, while the form of temporal domination encountered in those conceptions often derives from religious, deistic or 'official' generative grammars. Since human practical activities, however, are not fused with abstract time-units, temporal domination does not take the *systematically alienated* form it does under capitalist social time relations, and thus is not culturally expressed and mediated in the same ways. Whether time is conceived of as *between* nature and humans (Aristotle), an earthly matter of God's creation (Augustine), or at once the processes of becoming of nature and humans understood in a non-dichotomous way (grotesque realism), these conceptions contrast with cultural, philosophical and scientific expressions of capitalist temporal alienation, in which one finds a *radical separation* between 'inner' subjective time and 'outer' worldly time. This separation, which I read as an expression of capitalist temporal alienation, has sometimes been read in theories and practices of time related to non-capitalist social time relations. The point being emphasized here, however, is that this

separation is never as radical, *unbridgeable*, *systematic* and pervasive as it is expressed in the period of capitalist temporal alienation.

To be clear: conceptions of time in non-capitalist contexts often display characteristics of temporal domination, while conceptions of time rooted in a capitalist context tend to display characteristics of systemic temporal alienation. What I am suggesting here is that this can be related to the fact that capitalist social value formation *systematically* tends to alienate social time relations. This should be kept in mind especially when I discuss Augustine's conception of time. What I mean here is that 'religious domination' of time such as the one expressed in Augustine's writings needs to be historicized. One then find that Christianity at this period is becoming the universal imperial religious doctrine. Accordingly, the domination of time by God is also a form of temporal oppression aimed at taking away social time from the people, and instituting it as belonging to God and as articulated and officially organized by the Imperial Church and politico-religious authorities. Religious temporal domination, in that context, is the form taken by the attempts of ruling groups to acquire control over time and earthly matters. However, the bulk of social reproductive life is not guided by this time, it is rather embedded through social reproductive practices predicated for the most part on the social mediation of natural cycles in which the labouring processes and the time of labour are not alienated, although the concrete experiences of time of human beings, might be penetrated by forms of temporal domination predicated on the prevailing social-property relations and the strategies used by ruling groups to dominate time.

The contrast here with capitalist temporal alienation is pretty straightforward. Capitalist temporal alienation, through the unprecedented fusion between human labour and abstract time-units, entails the alienation of the time of human social reproductive practices *per se*, humans' fundamental relationship to nature and to others. The systematic character of capital's tendency to alienate time thus affects concrete human and social times in a systematic way, and shapes both conceptions and practices of time in a way which is different from non-capitalist contexts.

The remainder of this chapter will be structured as follows. Even if one goes back a bit earlier in the history of capitalism, (B) one can illustrate the difference in cultural expression of alienated time between capitalist and pre-capitalist contexts by drawing out the contrast between medieval popular realism and 18th and 19th century Romanticism. (C) If one then focuses on comparing the period of Western history of consolidation of industrial capitalism in societies such as Germany, France and England, from roughly the 1870s to the 1930s, to non-capitalist historical contexts, we can then discuss the contrasts between conceptions of time to be found in Aristotle, Augustine, Bergson, Husserl and Heidegger. Here I will propose that conceptions of time which express and mediate capitalist temporal alienation tend to conceive of time as a doublet, in a dualistic or dichotomized way.

B) Romantic realism and alien nature

Before focusing on the period at the cusp of the 19th and 20th centuries, let me very briefly explore a previous cultural development in cultural forms situated in the rebirth of popular realism, in the form of romanticism, in the late 18th and 19th century. I just want to say a word on this since I have previously discussed how Medieval and Renaissance popular 'grotesque' realism was rooted in non-capitalist forms of social relations, and how it furthermore entailed a genuine conception of time which I have identified as processual concrete time – not because I base what follows in the chapter on this. Romanticism, for its part, rooted in the period of capitalist development, expresses forms of alienation which I have identified in the process of the formation of a labour market and the specific forms of alienation it entailed with regards to social time relations. As Bakhtin points out, the contrast between popular realism and romanticism is rooted in the fundamental conception of the world that they both display. While popular realism sustained the imagery of a processual and cyclical temporal world intimately related to human bodies, the people, nature and practical activities, Romanticism presents us with cultural forms in which the world is represented as gloomy, alien and hostile.

Grotesque realism had already, in the 17th and early 18th century, been disconnected from folk culture. Bakhtin describes the process in these terms,

During this period (actually starting in the seventeenth century) we observe a process of gradual narrowing down of the ritual, spectacle, and carnival forms of folk culture, which became small and trivial. On the one hand, the state encroached upon festive life and turned it into a parade; on the other hand these festivities were brought into the home and became part of the family's private life. The privileges which were formerly allowed the marketplace were more and more restricted. The carnival spirit with its freedom, its utopian character oriented toward the future, was gradually transformed into a mere holiday mood. The feast ceased almost entirely to be the people's second life, their temporary renaissance and renewal (Bakhtin, 1984, p. 33).

In the period of capitalist development in Europe, the grotesque entered a new phase of development. Romantic grotesque was grotesque with a transformed meaning, 'it became the expression of subjective, individualistic world outlook very different from the carnival folk concept of previous ages' (Bakhtin, 1984, p. 36). One main characteristic of romantic grotesque, which differs sharply from its medieval form, is the alienated character of the world outlook it conveys. A 'private' outlook on the world, a profound sense of isolation, is found in the reaction against Enlightenment's formalistic authoritarianism of rationalism and logic. Alienation from others and from nature characterized this new cultural form. Alienation from others was expressed in the radically individualistic and private character of romanticism's idealistic philosophy, as well as the transfiguration of the meaning infusing several themes, such as madness, the mask, the marionette and the devil (see Bakhtin, 1984, pp. 39-40). For the gay and bright laughter of the medieval grotesque was substituted cold and ironic sarcasm, for the conception of 'our world' that was inherent in the medieval grotesque was substituted the imagery of an alien world, fear and terror of the world came to replace its regenerative power, as well its bodily character.

C) Philosophies of time

This brief discussion of Romanticism, although it points to important cultural manifestations of new forms of alienation,¹⁵⁶ leads us forward in another respect. Indeed, as Bakhtin notes, 19th Century Romanticism emphasizes the 'interior subjective' human, with its 'depth, complexity, and inexhaustible resources' (1984, p. 44). This 'interior', subjective experience, speaks aloud to the 'inner-focused' basis of conceptions of 'experiential' time as they are articulated in the period of industrial consolidation in the West.¹⁵⁷ As alienation from others and from the world turns one's gaze away from alien forces and toward inner human experience, experiential time is conceptually and culturally rearticulated in works which express the radical separation of this 'private' time from alienated 'public' time. In other words, as clock-time's hegemony occurs in the 'public realm' and is integrated into subjective experiences, the contrast of its alienated form with the concrete times of inner subjective experiences is expressed in philosophies of time by a radical separation, a dichotomization, of these times. In this section, I will shift the discussion to a more philosophical core by exploring the contributions of thinkers such as Aristotle, Augustine, Husserl, Heidegger and Bergson. Although these figures are abundantly discussed in the literature on the philosophy of time, I will present an argument which reads their philosophies of time as socio-historical phenomena, thereby establishing both continuities and ruptures where most of the literature constructs a serial linear narrative in which these thinkers are put into an abstract discussion occurring in a non-place in a non-time (Osborne, 1996; Ricoeur, 1983, 1984, 1985, among others).

¹⁵⁶ The idea of an alien world is not solely manifested in romanticism as such. One could point to Kant's epistemology, otherwise read as 'Enlightened', as also expressing the fundamental alienation of a world which, ultimately, the subject can't know. Kant turns philosophy's gaze to the internal structure of human consciousness, and the world appears as the unknowable. The thing-in-itself is out of human consciousness' grasp.

¹⁵⁷ Industrial development is not a homogenous process in the West, or in England, France, the US and Germany, which are countries I am more focusing on in this study. Also, industrialism is not always synonymous with capitalism. For instance, it seems like France's industrial development in the first half of the 19th century was not capitalist, while it did become after the 1860s. However, in the time that Bergson is writing in France, or that Husserl and Heidegger are writing in Germany, there is little doubt that industrial development at that point is capitalist in nature in both these countries, and that the hegemony of clock-time as a social time-form is established.

In the literature on time's most influential accounts, Augustine and Aristotle are usually presented as 'the founders' of two distinct positions on time, which end up forming an 'aporia' between natural time and subjective time (see for example Ricoeur, 1985; Osborne, 1996). The following history of the philosophy of time, and contributions such as the ones of Husserl, Heidegger and Bergson, are often presented as merely building on, improving or innovating on these fundamental positions. Accordingly for Paul Ricoeur, 'phenomenological' time, as it develops in these three philosophers' contributions, builds on Augustine's position. In what follows, I will argue that Aristotle and Augustine's divergences on the topic cannot be reduced to a mere philosophical debate, but rather express different forms of domination and resistance with regards to time which are rooted in socio-historical contexts. I will then argue that Husserl, Heidegger and Bergson's contributions should also be historicized, and can be read as expressing temporal alienation. This whole discussion will be in constant dialogue with Paul Ricoeur's *Temps et Récit*.

*

A prominent figure in this discussion is German philosopher Edmund Husserl, who based his philosophical work on the question of experience. He sought to unravel the complex cluster formed by consciousness and phenomena in experience. Husserl's ideas on time represent one of the most profound philosophical discussions of time. Crucially for my topic here, Husserl's contribution on time can be read as not only exhibiting, but *from the very start* radically expressing temporal alienation. This is nowhere clearer than in the aporetic separation of 'cosmical' and 'phenomenological' time which serves as the very starting point for, and later permeates, the German philosopher's enquiry on the topic. (I will further point out how Heidegger and Bergson's contributions also display temporal alienation).

A good way to appreciate this point is to contrast Husserl's take on time with one produced by another great thinker, Aristotle, in a different (non-capitalist) socio-historical context. Aristotle's take on time is chosen as point of comparison here since it does not express the form of temporal alienation one can find in conceptions of time rooted in

capitalist social time relations, and it stays mostly clear of conceptions in which time is dominated by God – albeit given back to humans in order to pilgrim through earthly life and hopefully reach back to God and eternity afterwards – such as the ones epitomized by religious doctrines in the Judaeo-Christian tradition, which characterize many conceptions of time produced both in non-capitalist and capitalist contexts in the West. By framing the discussion in such a way, one can come to consider how Aristotle expressed the unity between humans, time and the world through a form of symbolic mediation, while Husserl predicates his discussion of phenomenological time on the *a priori* dichotomization – separation – of worldly and subjective times. This argument requires that I delve into theory, and I will start with the Stagirite philosopher's conception of time, since the reading put forward here contrasts sharply with most of the literature on Aristotle's time conception, especially Ricoeur's.

Aristotle's conception of time

Aristotle's discussion of time – particularly in Books *iv* and *vi* of his *Physics* – remains highly controversial to this day. As one is reading it, the apparently convoluted and sometimes contradictory nature of the overall argument seem to confirm the sentiment that Aristotle's arguments are 'elliptical', 'frustratingly obscure' (Coope, 2005, p. 3), or bluntly that he does not provide a consistent account of time (Waterlow, 1984). The reason for the controversy might reside in the 'preliminary' nature of the argument: one Aristotle scholar indeed points out that the discussion as it stands is merely a collection of notes, especially chapters 12 to 14, and that Aristotle never actually wrote a 'final' text on the issue (Bostock, 1996, p. xlv). Although this is indeed a factor, the main reason for the difficulty seems to me to lie not only in the text itself, but in *how it is read*. Difficulties in the text, such as those involved in the Stagirite's main concept with regards to time, the 'now', might stem from the anachronistic imposition of a modern dichotomy on Aristotle's text.

This concept of the 'now', indeed, has troubled a lot of interpreters, since Aristotle fuses together two allegedly different notions in it, namely a notion of the *instant* –

denoting a 'naturalistic' stance with regards to the essential nature of time - and a notion of the *present* – denoting a 'subjective' or 'human' stance. From this perspective, what would be necessary distinctions between the two seem to not be drawn out satisfactorily (Waterlow, 1984, p. 104). My reading, however, suggests that this 'fusion' of both notions into *one* concept is symptomatic of the fact that Aristotle does not posit an unbridgeable gap between 'nature' and 'humans' with regards to time, he does not speak from such a dichotomous stance, which is rather a modern – capitalist - feature of social time relations.

For the present purpose, the discussion will be limited to three main features of Aristotle's conception of time: the 'now', the 'number', and the relationship between time and change. I will argue that much of the confusion that seemingly characterizes Aristotle's conception of time arises from the retrospective imposition of a modern – capitalist - dichotomy on his text. What is meant by that is that the question fuelling modern debates about time, namely is time a natural phenomenon or a product of the mind, forces proponents of that debate to enclose Aristotle in one or the other category, more often than not in the 'naturalistic' camp. The most uncontroversial claim, indeed, is that Aristotle's theory of time, as articulated through his concept of the now, presents time as a quantifiable and measurable continuum, traveled by a moving now, a point-like present, that delimits as well as unifies time. It is a commonplace to say Aristotle thinks that time is not independent from events, but that it is independent from an observer, or a reference frame. Aristotle's time would thus be a feature of the 'objective natural' world. Ricoeur's reading, for example, for all its masterful erudition, is flawed with this anachronistic superimposition, as he encloses Aristotle in the 'naturalistic' camp (1985, pp. 21-42), while Adam, interestingly and in sharp contrast with much of the literature, suggests that for Aristotle 'time does not belong to the temporal world but was to be located in the eternal realm of soul and reason' (Adam, 2004, p. 29). Such a dichotomy, as will become clear in the next sections, is a product of temporal alienation as it has been lived and experienced in capitalist social time relations, and scholars tend to read a-historically contributions to the topic through such a dichotomized lens. Since Aristotle

does not quite fit in either terms of the dichotomy, and is, as it appears to me, uninterested in choosing sides, the 'modern' question does not find a clear-cut answer, making his argument seem convoluted and unclear.

Accordingly, a fruitful way to proceed in reading him is to open up the dichotomy, and see how Aristotle's thought on the matter unifies stances rather than chooses sides. What is meant here by opening up the dichotomy is simply to avoid presupposing that time's essence *has to* be located *either* in 'nature' *or* in the human mind. First one must reject such essentialization, and second one needs to acknowledge, through Aristotle, that time *happens in the relationship between nature and humans* which, mediated as it is, for the Stagirite philosopher, by 'numbers', is not necessarily a relationship characterized by alienation *per se*.

As such, Aristotle does not posit cosmological and experiential time *as mutually exclusive*, or 'aporetic' as Ricoeur would have it, but rather as co-constitutive, as *unified* by a fundamental social mediation expressed through the socially constituted symbolic meaning of what Aristotle calls 'numbers'. The argument should then become clear: it is not a matter of maintaining that Aristotle does not distinguish between 'two sides' of the phenomenon of time, but rather that for him separating the two by an airtight wall, or choosing the side to which the essence of time belongs, is not the issue. In short, for Aristotle, time is *both* natural and human.

The 'now'

Aristotle's concept of the now is indeed very difficult to flesh out from his discussion in *Physics*, but it is central, since while it is not time *per se*, it *constitutes* it, as well as *being constituted by* it. As mentioned above, although the now is but one concept, there seem to be two different notions fused into it; the *now as a limit* that divides time into a 'before' and an 'after' - an instant - and the now that *constitutes the unity of time*, of past and future, the now that 'holds time together' - the present. Part of the difficulty lies in the fact that those two terms, instant and present, appear to modern scholars as opening up two mutually exclusive paths of conceptual endeavour: one into natural time, and the

other into subjective time. This stems from the fact that the instant and its concomitant 'before' and 'after' are derived analogically, by Aristotle, from magnitude and movement, thus suggesting that succession is something primarily existing in the world, which is only secondarily experienced by the mind in the temporal form of past and future. In Aristotle's text, however, these two sides are not strictly conceptually separated. Succession does 'come from' nature in the sense that movement is 'out-there', but this is in no way the last word, as Aristotle points out that change, in its relationship to time, can also be something that occurs in the mind, 'If it is dark and our bodily experience is nil, but *some change is happening within the mind*, we immediately suppose that some time has passed as well' (1996, p. 105, my emphasis). Accordingly, although instant might refer to 'nature' and present to 'mind', there is no such clear-cut separation in Aristotle's discussion. This reading appears to me as the product of a dichotomy ingrained in modern scholarship. The Aristotelian now is *both instant and present*. Let me look at its functions.

First, the function of the now is to delimit time's continuum into a before and an after. As such, for Aristotle, it is related to movement and magnitude.¹⁵⁸ Akin to a point on a mathematical line, the now divides time's continuum by acting as the beginning of one part and the end of another. As such, the now functions as a *limit*: no part of the past is in the future, and no part of the future is in the past. The now is the definitive limit of both - note here that Aristotle is not going out of his way to distinguish before and after from past and future, but seems to pass from one set of terms to the other with ease, suggesting perhaps that he does not think this distinction as strictly and obviously rigid as modern scholars do. Then, as an indivisible and duration-less instant, the now collects together all the various momentary events which occur in it. As such, 'nothing moves' in a now (Aristotle, 1996, pp. 144-6). This now-limit, for Aristotle, is always *different*, since it always - 'every time' - divides time differently: for instance stretches of time that were future are now past. It is in this sense that the now-limit is like an instant, a duration-less point or a time-position. And it is in this sense that it is not itself 'time', which is rather, as we will see, a measurable and divisible continuum.

¹⁵⁸ Aristotle derives his temporal 'before' and 'after' from considerations on space, 'what is before and after is found primarily in place' (1996, p. 105).

Second, the now constitutes the unity of time's continuum by holding a length of time together, by holding past and future together, and as such is 'an instant which is present'. In this function, the now is always the *same*: it always holds time together, or, in other words, the present is always the present, even if it is always situated at a different position in the series of instants. Like the now-limit, the present moment is instantaneous, and thus both in this sense are indivisible. Whereas the now-limit divided as well as unified time - by collecting together all the various momentary events which occur in it - the now-unifier also unifies time in relating all past events together in one order (the past), and relating all future events together in another order (the future). As such, the now is like the mythological face(s) of Janus: it has one face looking to the past, and one face looking to the future. In this sense, and crucially, the now is at the same time an instant of the world, related to change and magnitude, and a 'moment' of the mind, since it must be accompanied by some operation of discerning, measuring, and perceiving.

Since the present always changes, (of course, future becomes past), Aristotle likens the now to a moving object. Both are *different* by being successively in different locations, and the *same* because 'the actual thing that is the moving object is the same' (1996, p. 107). We can thus see why the now for Aristotle is always the same and always different, but not in a contradictory sense. As Waterlow puts it,

There is change in the contents of the past, the present and the future, but not in the analytic truth that the present is that in relation to which the past is past and the future future (...) the present, although different and different, is always the principle in terms of which everything past to it belongs to one order: and so also for everything future (1984, pp. 121-122).

This fusion of both notions of instant and present in Aristotle's concept of the now is often read as a 'confusion' between two orders of time (see Ricoeur, 1985; Waterlow, 1984). However, this is not the reading put forward here. I suggest rather that Aristotle keeps the two notions in tension into *one* concept for the simple reason that he is not conducting his inquiry according to the modern dichotomization of time in a doublet, which would then imply a rigid distinction between nature and humans, between a 'naturalistic instant' and 'humanistic present'. He is rather conceiving of time in a non-alienated, non-separated way. Humans and nature are not separated by an unbridgeable

gap in Aristotle's account of time. Let me bring the argument forward to exemplify this further.

Time and change

Having discussed the now, which is not itself time but constitutes it, I shall now look at Aristotle's discussion of time *per se*. Indeed, the discussions in book *iv* of *Physics* tackle the question of the nature of time. First, as far as the form of time is concerned, Aristotle says it is a continuum, and that it is divisible. Indeed, a continuum is characterized by being divisible *ad infinitum*. It cannot be made of indivisible parts. This characterization of time as a divisible continuum stems from the *analogy* between magnitude, change and time which underpins Aristotle's discussion. For the Stagirite philosopher, since magnitude is continuous, so then is change, and so then is time.¹⁵⁹

In order to tackle the question of what time *is*, Aristotle begins by considering the argument that time is change.¹⁶⁰ However, he notes that time cannot be the same thing as change, since on the one hand whereas change happens in one thing or one place relative to others, 'time is both everywhere and present to all things', and on the other hand, while change can be fast or slow, time does not comprise speed (Aristotle, 1996, p. 104). But if time is not change, Aristotle notes that it is also true that time is not without change. Then, reasons Aristotle, if time is not change, but also is not without change, then time must be an 'aspect of change' (Aristotle, 1996, p. 105).

It is at this point that Aristotle's argument introduces the notions of before and after. As noted, before and after are 'nows', here understood in the sense of 'instants', that are different: change has occurred in the stretch of time that lies between them. Again, such a *succession* is a relation founded in magnitude, which analogically is then attributed to change, and then to time. For Aristotle, when we notice a before and an after, i.e. when the difference – the occurrence of change – between two nows produces differentiated instants, before and an after: time has passed. Hence Aristotle's famous

¹⁵⁹ 'change follows magnitude, and time follows change' (Aristotle, 1996, p. 106).

¹⁶⁰ In book *iii*, Aristotle defines change as 'the actuality of what exists potentially, in so far as it is potentially this actuality' (1996, p. 57).

definition of time not as change, but as an *aspect* of change, 'when we notice before and after, then we say that there is time. For this is what time is: a number of change in respect of before and after' (1996, p. 106).

What Aristotle seems to be getting at here, is that time, as a number of change, is a *measure* of change. Indeed, he does mention that we measure change by time, and time by change. The relationship between the two seems to reside on the level of measuring. But time is not a simple set of measuring devices created by humans, a mere measuring device emanating from the human mind.

In order to understand this point, one needs to ask what precise aspect of change time is. Aristotle states that time is the *numerable* aspect of change. This notion of 'number' in Aristotle's account has raised many debates. Indeed, Aristotle brings together time and number on numerous occasions, 'time is the number of movement', 'time is the numerable aspect of change', 'the now exists in so far as before and after are numerable', or bluntly 'time is number' (1996, p. 106, 110). Let me look at this more closely.

Number, time and temporality

When Aristotle uses the word 'number', he points out that it has two meanings. It is worth quoting him here, 'Time is a kind of number. But 'number' is ambiguous: we describe not only that which is numbered and numerable as number, but also that by which we number' (Aristotle, 1996, p. 106). Crucially for Aristotle, 'Time is a number in the sense of that which is numbered, not in the sense of that by which we number. That by which we number is not the same as that which is numbered' (1996, p. 106). I read Aristotle here as simply establishing a distinction between numbers as a set of measuring devices created by humans, and numbers as that which we number, i.e. worldly features on which we inscribe numbers in order to measure them.¹⁶¹ As Annas suggests, a detour through *Metaphysics I* helps us understand Aristotle's take on numbers (Annas, 1975). In his account of 'one', Aristotle is clearly against the Platonic idea that numbers possess an independent existence, as abstract objects, outside time and space; they rather exist in so

¹⁶¹ What makes the world numerable is that things-in-the-world simply can be counted. This, for Aristotle, is a simple fact.

far as things in the world are numerable, they exist in so far as they can be attached to things-in-the-world.¹⁶² Things-in-the-world exist, but numbers do not have an independent existence in the same way, they are a product of the relationship between humans and their world. Hence, when Aristotle states that 'time is number in the sense of that which is numbered, not in the sense of that by which we number' (1996, p. 106), he is highlighting that time is not only a mere measure: it is not merely a series, or an order, that humans design and use to measure the world they experience. Rather, it is also 'in' the world itself, a series or an order of the world itself, that which is numbered, the 'real' entity to which humans attach numbers.¹⁶³

But how does time gets numbered? I would argue that for the Stagirite, time gets numbered by humans precisely through the now. On the one hand, the fact that the now is indivisible, in both its functions, is a feature that would prevent it from being 'in' time, since time is a continuum and thus can't be made of indivisible parts (this makes the indivisible now the divider of time's continuum). On the other hand, the key lies in how the now is also in time by virtue of being a *number*. It is the numeral aspect of the now which makes it a part of time, 'So in so far as the now is a limit, it is not in time (except coincidentally), *but it is in so far as it numbers*' (Aristotle, 1996, p. 108, *my emphasis*). It is here that we can grasp how present and instant are linked for Aristotle into one concept: indeed, the link between the now and time, what makes each of them constitute the other, what makes each of them exist, is the fact they that can be related, put together, by their numeral aspect. While time is the number of change, the now and time are linked together through number, and thus, for Aristotle, the relationship between humans and their world

¹⁶² As Annas summarizes, 'Aristotle is always an uncompromising anti-Platonist about numbers' (Annas, 1975, p. 99). Annas goes too far in arguing that Aristotle's point is to relate time as closely as possible to the human activity of timing things. She argues that time as a number is a means for Aristotle to offer an anti-platonic account of time not as an all-encompassing idea, but rather as a human activity. She fails to notice Aristotle's own distinction between two kinds of numbers, treating numbers as solely a measuring device, and not also as a feature of the world. Her reading thus presents an Aristotelian concept of time which is reduced to a human activity, and that loses its character of 'thing-in-the-world', or 'that which we number'. She apparently falls prey to the dichotomization of Aristotle's thought which pervades much of the literature.

¹⁶³ On the other hand, number as that by which we number is a device to measure, to count. It is dependent on the human mind, but more importantly on the human mind as it is developing in specific socio-natural conditions. In this sense, numbers humanize the world, in making it measurable, meaningful, workable.

is not severed, the 'time of the world' and the 'time of the soul' are but one and the same time.

The inextricable relationship between instant and present can therefore be read as a link between nature and mind. Not only are they linked together, but even more so, crucially, they are both *constitutive* of each other, since 'time' as 'numerable' and the 'now' as 'numerator' need each other to even exist, 'it is also clear that if there were no such thing as time, there would be no such thing as the now, and that if there were no such thing as the now, there would be no such thing as time' (Aristotle, 1996, p. 107).

Here one can see that the now does not move in an 'already-constituted time continuum'. Rather, the now *constitutes* the time continuum just as the time continuum *constitutes* the now. The now is such a 'number by which we number', but it is not independent from numerable things-in-the-world. Time, then, is thus *both* 'in' the world, and 'in' us: more precisely it happens in our relationship to the world.

Time and the now are thus occurring *between* humans and nature. In this way, humans and nature are inextricably linked together. Time might exist in the world, but it is not constituted without human 'temporalizing', while there would be no such thing as human temporalizing without 'time-in-the-world'. Those two are not pre-established as isolated features that would come into contact. Rather, they are formed by a mutually constitutive relationship. Time and human temporalizing through the now are co-constitutive, just as the world and the mind constitute each other. Numbers, here, crucially, mediate mind and nature, human temporality and time.

In contrast to much of the literature on Aristotle's conception of time, and also to the dissident voices which attempt to make the case for putting Aristotle's conception of time on the other side of the modern dichotomy, I would argue that for Aristotle, the temporal relationship between mind and nature is a relation of co-constitution. In other words, without the time of the world, there would be no human temporality, but without human temporality, there would not be anything time-like in the world. On my reading, Aristotle is, against accounts that put him either in the camp of experiential time or in the camp of cosmological time, unifying the two.

I thus disagree with readings that simply make Aristotle a proponent of cosmological time (see Osborne, 1994; Ricoeur, 1983, among others), or conversely that argue that for Aristotle time is located in the 'realm of reason or soul' (Adam, 2004). Aristotle's discussion in *Physics* does not occur inside such a dichotomy. To reiterate, this apparent 'uncertainty', as to which side Aristotle is really on, stems from the anachronistic superimposition of a 'modern' dichotomy on Aristotle's text. For one, Ricoeur is unable to free his reading from this dichotomy. He forces Aristotle to take sides, and he is forced to conclude that Aristotle's time is the 'time of the world' since time is analogically linked to movement and magnitude which are functions of the world. Ricoeur is thus unable to make sense of the fact that the soul and the world coexist in the constitution of time, and when he finally chooses side, he says that Aristotle's definition is a cosmological one at the same time that he is conceding that the soul, throughout Aristotle's discussion, can never be ruled out. Ricoeur forces Aristotle in the naturalistic camp, 'en dépit du renvoi, à chaque phase de la définition, à des opérations de perception, de discrimination et de comparaison qui ne peuvent être que celles d'une âme' (Ricoeur, 1985, p. 29).¹⁶⁴

When one lifts the veil of anachronistic dichotomization, the Stagirite is found to argue that time is *both* a worldly phenomenon, and a human perception, and he situates its fundamental mediation in socially constituted symbolic language (numbers), thereby providing a conception of time in which the relationship between humans and their world is not severed, but actively mediated by human activity in symbolic conditions, which are themselves related to, and part of, the development of society.

Nowhere can we see better how Aristotle rejects the aporia between 'natural' and 'human' time than when he directly raises the question as to whether time would exist if there were no mind to notice (number) it. He is led to an open ended conception, a yes and no answer, that destabilizes at first, but makes much sense in light of what has been said above. His open-ended answer is worth quoting here, 'it is impossible for there to be time if there is no mind – except that there might still be whatever it is that time is'

¹⁶⁴ 'Despite the reference, at each stage of the definition, to operations of perception, discrimination and comparison which can only be performed by a soul' (free translation).

(Aristotle, 1996, p. 115). Why can't Aristotle straightforwardly answer the question? On the one hand, he suggests quite simply that since time is an aspect of change, it is reasonable to assume that change might still occur even if there were no humans to notice it, hence time would still 'exist'. However, removing humans from the picture would at the very least *alter* what time is, it would leave 'whatever it is that time is', i.e. time without temporality, a block-time, or tenseless, universe, which has, as a matter of fact, become one of the main world views of modern physics in which humans have been left out of the picture.¹⁶⁵

Aristotle thus offers many difficulties, but his account of time unifies humans and their world, through the mediation of meaning (numbers). Meaning, however, is here understood as socially constituted. Once we recognize that a symbolic order is a social order,¹⁶⁶ what Aristotle is drawing attention to is thus the fundamental social mediation between humans and their world in the constitution of time. Humans and their world are not radically severed, but co-constituted through social mediation. Temporal alienation, in Aristotle, is not. The time of the world is not seen as something independent of human life, human consciousness, or society.

If Aristotle's conception testifies of a form of unity, it might very well be because he does not think from a socio-historical context of social time relations characterized by temporal alienation. Aristotle the historical man, of course, was not free from socio-historically specific class interests, and neither is his thought. But these interests are not linked to a group that, in Aristotle's socio-historical context, dominates thanks to, by virtue of, or because it buys producers' *time*. The class interests to which Aristotle's thought might be related, the rural aristocracy of Ancient Greece and Macedonia,¹⁶⁷ might dominate labour, but not specifically the *time* of labour. Social time, in Aristotle's context, does not systematically display the characteristic of alienation. As such, time is

¹⁶⁵ See Appendix A.

¹⁶⁶ There are obviously lacanian tones to my argument here, but Aristotle himself says that to exist in time means to exist in the number, to be enfolded in it, just like we are enfolded by the place in which we are. As such what enfolds humans more than the social and symbolic order in which they dwell?

¹⁶⁷ For an insightful and exhaustive discussion of Aristotle's context, see the studies by Wood & Wood (1978), and Wood (2008).

not presented either as an out-of-reach naturalized or reified phenomenon, or as a product of subjectivity radically alienated from an 'outside' world.

Augustine

The separation of 'public' or worldly time from human experience or consciousness might be a product of capitalist temporal alienation, itself stemming from the unprecedented fusion of alienated labour and time under capitalist social relations, which has alienated social time in a specific fashion. Not all conceptions of time stemming from non-capitalist contexts exhibit it in non-dominated forms, and this has to do with efforts from ruling groups to dominate, if not directly through 'economic' means, at least ideologically through the formulation of doctrines, the times of social life. Indeed, it is common that conceptions of time rooted in non-capitalist contexts exhibit features of temporal domination, often in the form of religious doctrines where time is said to be a creation of God. One of the more obvious examples here would be Augustine's conception of time.

Indeed, in a non-capitalist context, appropriators and their allies appropriate surplus product through 'extra-economic' means - political, juridical, military, etc. - often wrapped up in doctrines and ideologies legitimating this state of affairs. However, non-capitalist social time relations were not characterized by the fusion of concrete times with abstract time-units.¹⁶⁸ As such we witness different strategies, doctrines and narratives deployed in the social realm and meant to wrench away from producers and popular classes the time of their lives, installing in the social realm conceptions and practices of 'official time' over and against the concrete times of human reproductive practices and human lives, consciousness and bodies. The most common form of these narratives is obviously found in religious doctrines, as well as doctrines which posit the existence of

¹⁶⁸ The case of slavery is here a very interesting one and shows striking resemblance to wage-labour on the level of temporal alienation, since slavery entails the complete subjection of slaves' bodies. However, in slavery, the concrete times of slaves is appropriated through force, while in capitalism the concrete times of social life are alienated through their fusion with abstract time-units.

some sort of 'official' time through various forms such as state decrees,¹⁶⁹ out of the reach of the masses.¹⁷⁰ Augustine's conception of time clearly belongs to such a form of 'religious domination', as time is here presented as God's creation.

In a capitalist context, social time relations reify time by constructing an abstract time-framework which compels individuals' concrete times to obey the requirements of abstract time-units. In such contexts, conceptions of time tend to display temporal alienation in one form or another, in the sense of a radical separation between 'inner', 'private' or 'concrete' experiential time and 'outer', 'public' reified time, which in its abstract form is seen and experienced as fundamentally alien, inauthentic, or out of reach. I will explore that in more details below through a reading of Husserl, Heidegger and Bergson's philosophies of time. The idea that abstract time is but a derivative from concrete times in an alienated form does not get lost with these thinkers, as they express the alienation of the concrete times of human experience in the systematized structure of an abstract, outer, 'public' time.

Augustine's time is characterized by a form of what we could call 'religious domination'. Time here is a feature of the world, but as such it is a creation of God, of whom he says, 'You are the Maker of all time' (Augustine, 1961, p. 263). Time is not seen as the product of any form of mediated human social interaction with nature, or human social activity. Time's very *passage*, which is the main 'mystery' upon which Augustine ponders, is a product of God's eternal will, 'No moment of time passes except by your will' (1961, p. 254). Meanwhile, Augustine's 'ontological reasoning' leaves him unable to derive the extension of time into past, present and future from elsewhere than as

¹⁶⁹ The example of the evolution and vicissitudes of calendars in the West illustrates this point. The making of calendars, for example during the period of the Roman Empire, was often a matter of imperial decree. Likewise, the many calendar reforms during the Middle Ages and the early modern period were made by very select committees made up of dominant figures of the Church. See among others Zerubavel (1981, 1985).

¹⁷⁰ In this sense one might argue that Aristotle's focus on the numerable aspect of time posits time, and its understanding, as something belonging to the learned communities, in this case scientists and philosophers. The same goes for the formation of meaning, which I have posited as a social fact, but would probably be restricted to learned communities and aristocrats for someone like Aristotle.

a product of *distensio animi*.¹⁷¹ In other words, time is God's creation, and its extension is derived from the soul. Present, past and future have no roots in the socio-historical world, and as products of the soul, belong to God.

What is meant here by 'ontological reasoning', is that Augustine establishes that past, present and future are not derived from the physical world since the three of them, in their own ways, *are not*. The past is no longer, the future is not yet, and the present cannot said to *be* since it has no duration (Augustine, 1961, pp. 264-6). It is only through the mind that they come into being, respectively through memory, attention (or direct perception) and expectation (Augustine, 1961, pp. 267, 277). For Augustine, the distinction between past, present and future is not one between presence and absence in consciousness, but a distinction in the *form* in which they are present in consciousness, namely memory (past), attention (present) and expectation (future).

Indeed, Augustine grants existence to past, present and future only in so far as they 'exist in the mind', as they are '*presentified*', i.e. *made present*, in it,

From what we have said it is abundantly clear that neither the future nor the past exist, and therefore it is not strictly correct to say that there are three times, past, present and future. It might be correct to say that there are three times, a present of past things, a present of present things, and a present of future things. Some such different times do exist in the mind, but nowhere else that I can see. The present of past things is memory; the present of present things is direct perception; and the present of future things is expectation (Augustine, 1961, p. 269).

There, Augustine's ontological commitment seems to involve a world which is *temporal*, but not *tensed*. Augustine's world is a world of becoming, but in a tenseless way, since the temporality of past, present and future can only be derived from the mind, and not directly from the world itself. Augustine's basic position thus derives from his granting ontological existence to what *is*, rather than to what *becomes*.

This whole reasoning about the non-existence of present, past and future outside of the mind seem at odds with Augustine's distinction between heaven and earth, eternity and time, stillness and becoming. While in the operation of deriving time's extension

¹⁷¹ Although, in any case, it should be pointed out that for Augustine, God is also the maker of the mind and of the intelligence (Augustine, 1961, p. 257). See also Ricoeur (1985, p. 35) on time's extension deriving from *distension animi*.

from *distensio animi*, Augustine is led to overlook the fact that what is *becomes*; one finds that on the other hand he does posit the human world as a realm which occurs and develops in time, while heaven, and God himself, are eternal. Eternity, 'which is forever still' is in sharp contrast with time 'which is never still' (Augustine, 1961, p. 261). The human world is characterized by – tenseless - becoming, by time's passage, by the existence of time itself, while the 'City of God' is eternal: there is no time in heaven. We find such a distinction at work in Augustine's rendition of creation, but also more specifically in his distinguishing between the eternal word of God, 'you say all at one and the same time, yet you say it eternally' (1961, p. 259) and the things which are created through God's word, which are subject to time, which 'do not all come into being at one and the same time, nor are they eternal' (1961, p. 259). The human world, characterized by time, is subordinated to the 'City of God', to eternity 'which is supreme over time' (Augustine, 1961, p. 263). So, however 'full of time' the human world might be according to Augustine's distinction between world and heaven, it is a tenseless time, a pure, unqualified passage, according to Augustine's doctrine on time's extension. We are left with a threefold 'grand scheme of things', with on one level a timeless heaven, on a second a 'timefull' but tenseless world of becoming, and finally a tensed and tensing mind.

While Aristotle encompassed both instant and present, nature and mind, in his concept of the now which constituted, and was constituted by, time, making time a co-product of mind and nature, Augustine on the one hand makes time a product of God's will, and on the other hand makes time's very extension a product of the mind (though itself created by God), by positing that the lived present resides in the mind, while the worldly instant remains tenseless in and of itself. While instant and present were not conceptually separated in Aristotle (both are *in* the 'now'), Augustine's discussion implies a conceptual distance between the two. What is often read as the first 'human' theory of time is rather a clear expression, on many levels, of the domination of time by God epitomized in Augustine's doctrines. The human world, though itself a world of becoming, ends up playing no part in the actual constitution of tensed time, since the soul

being responsible for tensed time does not belong to this world, but to the next. Both the becoming world and tensed time, and from this also history, do not belong to humans in their relationship with socially mediated nature and environment. Temporal domination in that way, as exemplified in Augustine's thought, posits time as something subordinated to God's eternity, to the a-historical world of God's eternal 'word'.

Although Augustine does seem to be trying to derive time from the soul, the fundamental point to which he sticks is that time is a creation of God, it is 'human' only to the extent that it exists in the human world, while ultimately, it is subordinated to eternity, timelessness, in the same way that the world is subordinated to God. Time is thus not 'human' in the sense that it is derived from the extension of the soul, it is human in the sense that it permeates human life, which ultimately always remains subordinated to the higher spheres of eternity and divinity.

*

Augustine's derivation of time's extension from the mind has led scholars to posit a continuity between Augustine and thinkers such as Husserl and Heidegger - who also enquire into the relationship between time and human consciousness - instead of historicizing both dichotomies in order to assess both what they share in common and what distinguishes them. As such, the most common reading is to posit a transhistorical 'aporia' of time between naturalist and subjectivist conceptions of time.

Nowhere is this 'aporia of time' discussed more masterfully than in Ricoeur's work. Nevertheless, as has been hinted at above, he anachronistically imposes what is a product of temporal alienation back on conceptions stemming from other contexts. Let me look at this more closely.

Ricoeur and the aporia, Husserl, Heidegger and Bergson.

Ricoeur derives the fundamental 'aporia' of time from the fact that a psychological and a cosmological theory of time *obscure* and *imply* each other at the same time (1985, pp. 25, 41-2). There are, for the French philosopher, two entry points to the question of time; movement (nature, universe, world) and soul (mind, consciousness).

Although his attempt at reconciliation does emphasize that both entry points should be taken at the same time, his reading of the history of philosophies of time is nonetheless performed through this *a priori* dichotomous lens. As such, philosophies of time produce and reproduce the dichotomy notwithstanding their socio-historical contexts of formulation. In other words, Ricoeur does not root the aporia in its social context, and therefore sees it as a transhistorical phenomenon without socio-historical specificities.

Ricoeur illustrates the two poles of the aporia through Aristotle and Augustine, each posited as founders of one of the 'entry points'. The main conceptual expression of the aporia thus revolves around the 'instant vs present' conceptual conundrum (Ricoeur, 1985, pp. 39-42). For Ricoeur, there is an *unbridgeable* conceptual gap between Aristotle's indifferent instant and Augustine's particular and determinate present (recall that Ricoeur reads Aristotle as a proponent of a naturalist conception of time). Ricoeur goes on to argue that while any instant can order a before and an after, can create a *succession*, the 'truly' temporal past and future are only in relation to a definite (lived) present. In other words, present, past and future are not derivable from a purely worldly 'objective' *succession*. This is how Augustine separates instant and present, and subsequently tries to derive time's extension from the extension of the soul. Unlike the instant, which is read in Aristotle as an indivisible point, itself somehow tenseless, the Augustinian present contains the whole temporal spectrum within itself; it is formed by a cluster of past, present and future. A threefold present, then, is substituted by Augustine for Aristotle's instant, read here as a function of purely objective succession.

For Ricoeur, this means that we can only 'leap' from one side of the aporia to the other. The distance between the 'cosmological instant' and the 'lived present', between nature and consciousness, is unbridgeable. But a historical reading of the aporia as it is expressed in its modern form might lead us to consider its specificities. Let me look at the 'aporia' of time in conceptions which express capitalist temporal alienation such as Husserl's, Heidegger's and Bergson's.¹⁷²

¹⁷² The choice of these three philosophers should not be interpreted as a statement of their capacity to represent the variety of modern philosophy (quite the contrary), or that they exhaust the range of questions

*

Let me now turn to a consideration of the way in which the temporal alienation specific to capitalism is expressed in the separation of humans and their world, and how this is exhibited in and mediated by 'modern' conceptions of time. One instance in which one can see such a separation between the time of world and the time of humans is in the conception of an 'experiential' or 'phenomenological' time, which is chiefly associated with the philosophies of time found in the works of Husserl, Bergson and Heidegger. Time is here brought back to the human 'inner' experience of it, and 'cosmical' time, as Husserl puts it, is an altogether *other* subject matter. Phenomenological time is 'subordinated' (Osborne, 1994, p. 5) to consciousness, or human existence. Time becomes here a dimension of the self-constitution of *Dasein*, to use Heidegger's term.

It is a common feature of these philosophies of time that 'worldly' time appears radically alienated, either in the form of something altogether *other* (Husserl), *inauthentic* (Heidegger), or *contrary to human freedom* (Bergson). In the same line of thought, Ricoeur had also noted that any advancement in the *phenomenology* of time entails a 'growing aporicity' between phenomenological time and the 'time of the world' (1985, p. 20, 49). In other words, the more one delves into the inner experience of time in order to find its essence, the more one tends to reproduce the separation – either expressed in an *ontological* or *ethical* manner – between this time and the time of the world. This separation between 'inner' time and social time expresses the alienation of worldly time which characterizes such conceptions.

Husserl and the separation of human time and worldly time

Husserl's philosophy of time-consciousness proposes to see time as *constituted by consciousness*, as a *form* which is constituted by conscious intentionality and from which objective time is derived. Ultimately rooted in the self-constituting 'absolute flux of consciousness', time appears, in Husserl's writing on the matter, as a formal framework,

that can be asked about time. I chose these three philosophers mainly because of their prominent position in the field of time studies.

itself a product of consciousness. I shall enquire how such a conception expresses features of temporal alienation.

Let me start here by noting some interesting philosophical distinctions between Husserl's conception of time and other philosophical features I have identified in Aristotle's and Augustine's discussions. The first thing to note, is that the idea of the flow of time, in Husserl, is approached differently than in Aristotle's work, and this is one of the most important philosophical aspects of his thought. Indeed, Husserl is closer to Augustine in how he frames the problem of time in terms of lived, or experienced, time. Husserl's admiration for Augustine is mentioned right from the start of the enquiry, as for him, our modern age 'has failed to surpass or even to match the splendid achievement of this great thinker [Augustine]' (Husserl, 1991, p. 3). This debt is shown in how Husserl does not start nor finish his inquiry by positing a point-like *instant* which moves from before to after - a conception often attributed to Aristotle, 'the experienced now, taken in itself, is not a point of objective time' (Husserl, 1991, p. 6). He rather focuses on the movement of a longitudinally extended *experienced present* which comprises the whole complex of 'past-present-future'. This critical stance towards the so-called 'Aristotelian instant' is symptomatic of the fundamental choice of focus performed by Husserl, reworking from Augustine's distinction between instant and present. Indeed, by abstracting a concept of the present from the Aristotelian now, by substituting present to instant, he performs a separation of the two - while, as I have noted above, the instant and the present were unified into one concept in Aristotle.

There is a good reason why Husserl focuses primarily on the present, and substitutes it for the instant. Indeed, the instant, which Husserl conceives of as a *limit*, is not *primary*, but is itself a derivation from the lived present, conceived of as a *source*. This derivation is a result of what Ricoeur elegantly calls, summarizing Husserl's position, 'l'abstraction opérée sur la continuité par un regard qui s'arrête sur l'instant et le convertit de point-source en point-limite' (Ricoeur, 1985, p. 60).¹⁷³ This prioritization of the present over the instant – denoting a previous severing of their unity, as we will see in

¹⁷³ 'The abstraction operated on continuity by a gaze which stops on the instant and converts it from a source-point into a limit-point' (free translation).

more detail below - stems from such a critical stance towards the instant-limit as a concept which does not adequately convey the human experience of time. A concept of the present is abstracted from the Aristotelian concept of the instant-present, and posited as the source of time.

Husserl's present is made up of three parts: the present-present, the present-past, and the present-future. This simply means that each present is the source-point of its own separation of temporal dimensions: the past is past with regards to a present, as the future is future with regards to a present. The now is a 'relative concept' (Husserl, 1991, p. 70). But, in contrast with Augustine, Husserl conceives of the present as *enduring*. This is how the phenomenological present, specifically Husserl's, does not depict the present as a 'point', but *extends* it. Based on Husserl's diagram (1991, p. 29), one could also say that the phenomenological present is *deepened*. In phenomenological terms, the lived present has *duration*, expansion; it endures. That the present has *duration* - as persistence through change, as the *identity* of a temporal totality - is established by Husserl as the 'primary phenomenon of phenomenological time' (see also Osborne, 1996, p. 50).

Focusing on such a present, Husserl illustrates its *continuity* by arguing that for any experience to be continuous, the lived present has to include elements of the recent *past* through projective identification. In the same way, the experiential present also includes a projected *future*. Then, any moment's existential structure includes (recent) past and projected future, which are parts of the experienced present, and are themselves 'absolutely given' in it. Husserl's concepts of *retention* and *protention* are thus designed to grasp this fundamental clustering of the three temporal dimensions in every 'present', but also in every past and every future. This is a crucial point for Husserl. Indeed, if the experienced present merely included only a passing now, there would be no way for experience to be continuous: for example we could not speak, or even merely orient ourselves. Kern describes this argument as follows,

any moment must involve consciousness of what has gone before, otherwise it would be impossible to hear a melody, maintain a personal identity, or think. The melody would appear as a series of discrete sounds unrelated to what had gone before, understanding of ourselves would be chopped into unconnected fragments, and it would be impossible to learn a language or follow an argument (Kern, 1983, p. 43).

In Husserl's terms, the present must then share its 'given-ness' to consciousness, its 'immediacy', so to speak, with recent previous past 'nows' which remain present to consciousness in the form of *retentions*. The concept of retention (and protention) allow consciousness' experience to be continuous, they allow consciousness to intend objects through sensory contents not only with data which are immediately, now, present to consciousness, but that are 'still' or 'already' present to it. The present is thus 'deepened', it is not a mere one-dimensional point, it rather *endures*, and is *deepened* by past and future aspects as well.

In order to illustrate the argument about retention, Husserl takes the example of a sound – or a tone - noting that it does not only occur 'in' time, but also 'through' time.¹⁷⁴ Husserl wants to stress that the unity of the experience of a sound, its identity, is constituted 'over time': it is only possible to experience its unity by performing a 'retention' of recent previous phases of the sound and by identifying these phases with a 'point-like' now, which is as a result, as I have put it above, 'deepened', becoming a source-point.¹⁷⁵ Every present moment, for Husserl, entails a 'now-consciousness' which is not limited to the present instant: for every present moment, there is a form of past and future which shares the 'primordial now-form' (1962, p. 219). This consciousness is impressional at the source point, but is constantly changing, *modified* into retentional consciousness. This forms the law of modification of consciousness (Husserl, 1991, p. 31)¹⁷⁶ consisting of the constant modification from impressional consciousness to retentional consciousness, between the 'grasping-as-now' of impressional consciousness

¹⁷⁴ This example is inspired by Augustine's own example. In Husserl, the example of a melody, for its part, will be used to illustrate the difference between retention and re-memory (*Wiederinnerung*). The relationship between time and music is rich; for example, Galileo sang a song to measure duration in his experiments on rates of acceleration.

¹⁷⁵ Ricoeur says 'widened', *élargi* (1985, p. 57), Kern says 'thickened' (1983, p. 84).

¹⁷⁶ Indeed, with regards to the past, 'necessarily attached to the now-consciousness is the consciousness of the just past, and this consciousness again is itself a now' (Husserl, 1962, p. 219). Husserl spends less time developing the argument as per the future (pretension), but he does say that the present is modified by anticipations of the future. Ricoeur insightfully points out that Husserl's own stance – a phenomenology of perception (even if such perception is bracketed out) – makes the transposition from an analysis of past consciousness to future consciousness difficult, given the difference between the forms in which memory and anticipation 'produce' a present. See Ricoeur, 1985, pp. 70-1.

and the retentions attached to it. Accordingly, retention is like 'a comet's tail that attaches itself to the perception of the moment' (Husserl, 1991, p. 37).

Husserl's phenomenological analysis of time-consciousness ends up focusing on *form*, since, as one scholar straightforwardly puts it, for Husserl 'time is a formal structure' (Brough, 1991, p. XXIV). Indeed, experience has, so to speak, two dimensions: there is on the one hand the actual experience (joy, pain, color, etc.) and, on the other hand, the form in which this experience gives itself. Temporality or endurance is one such *form* (which is a feature of both transcendent and immanent objects, but Husserl's stance leads him to enquire into immanent objects to derive their transcendental character). This means that the subject experiences the threefold 'now' as a *form* with continuously new and fresh contents: the now is 'a form that persists through continuous change of content' (Husserl, 1962, p. 218). Considered from the perspective of the temporal object, for example a tone 'itself is the same, but the tone "in the manner in which" it appears is continually different' (Husserl, 1991, p. 27). As the 'nows' pass and vanish, the 'past' is also changing content, as well as the future, while the *form* of temporality past-present-future is always the same and the temporal objects stay the same while their mode of appearance change, 'Time is fixed, and yet time flows' (Husserl, 1991, p. 67).

Husserl's fundamental idea of a durational present, then, entails that the whole complex of past, present and future is moving alongside the ever-vanishing 'now' (Husserl, 1962, p. 218). For Husserl, then, every present moment entails a present-present, a present-past, and a present-future. Husserl calls this complex of now-consciousness, with its present-past, present-present, and present-future, the pure Ego's 'total primordial *now*-consciousness' (1962, p. 219). The same reasoning applies to past-consciousness and by extension to future modes as well. Only when we consider the totality of past (past-past, past-present, past-future), present (present-past, present-present, present-future) and future (future-past, future-present and future-future), can we arrive at the whole phenomenological time-field of the pure Ego, at the '*whole, essentially unitary, rigorously self-contained stream* of temporal unities of experiences' (Husserl, 1962, p. 219).

*

This unified conception of time-consciousness rests on an articulation of three levels of time-constitution, which Husserl (1991, p. 77) locates as follows. One level is 'objective time'. This is the time of transcendent objects in the world, to which I will come back in more detail below. For now, let me just mention that this level, for Husserl, derives from the other two, which are therefore primordial in the constitution of objective time - recall that objects themselves, in Husserlian phenomenology, are not given in-the-world *per se*, but are *constituted* by transcendental consciousness through objectivating apprehensions, themselves performed through consciousness' *intentionality*. In other words, objective time, the time of the world, is not the time that primordially 'is', but is rather a derivative.

The second is the level of the time-constituting acts of temporal objects (*Zeitobjekts*), the 'constituting multiplicities of appearance' (Husserl, 1991, p. 77), or in other words, the level at which objects are made temporal through the modes of appearance through which they appear: past, present, future. Let us recall that for Husserl, a temporal object is not an 'object' in all of its determinations, but only in so far as we consider its duration,

By *temporal objects in the specific sense* we understand objects that are not only unities in time but that also contain temporal extension in themselves. When a tone sounds, my objectivating apprehension can make the tone itself, which endures and fades away, into an object and yet not make the duration of the tone or the tone in its duration into an object. The latter – the tone in its duration – is a temporal object (1991, p. 24, original emphasis).

This duration of the object is constituted when considered through the formal structure of the Husserlian three-fold now, and it is there that we find the second level, which we have already touched upon above. This is the level of the immanent internal time of intending acts and contents of consciousness. Objects are made temporal by their appearing in temporal form, i.e. in the form of past, present or future. Then, *immanent* temporal objects are objects of consciousness which in themselves endure, which are considered from the aspect of their duration. Past, present and future, or the extended Husserlian 'now', are modes of appearance of such immanent temporal objects. It is at

this level that time's characteristics are explored. Time as a continuum, temporal 'phases' such as past, present and future, time's flux, the constant receding into the past of the unity of any temporal object, are all features belonging to the formal structure of the consciousness of time, constituting *immanent* temporal objects.

The third level is the fundamental level of the absolute flux of consciousness and Husserl posits it as primordial, 'this absolute consciousness that lies before *all* constitution' (1991, p. 77). Husserl reaches this third level of time precisely when he formalizes the relationships between immanent temporal objects. Indeed, as Ricoeur notes, consciousness' 'absolute flux' appears when Husserl formalizes the relationships between present, retention and protention, between, as Ricoeur puts it, 'le maintenant originaire et ses modifications' (Ricoeur, 1985, p. 77).¹⁷⁷ At this level of pure consciousness, Husserl thus leaves any and all objects (immanent or transcendent) out of the analysis, and focuses on the formalization of the relationships between retention, protention and now-source without any reference to temporal objects. The constitution of such a temporal form of experience, for Husserl, is itself the product of the 'absolute flux of consciousness'. 'Time-constituting phenomena', Husserl tells us, 'are evidently objectivities fundamentally different from those constituted in time'. In other words, what constitutes the now itself, is not 'in time' *per se*, but constitutive of it: it is 'the time constituting flow as absolute subjectivity' (Husserl, 1991, p. 79). Impressional and retentive consciousness as time-constituting consciousness are moments of the flow (Husserl, 1991, p. 80).

At this level, there is no-thing enduring anymore, there is only pure duration itself, and Husserl confesses that he is struggling to find words to characterize it, 'for all this, we lack names' (1991, p. 79). One can only speak of the absolute flux of consciousness 'in conformity with what is constituted', i.e. with the conceptual vocabulary already used in the theorizing of the second level. Husserl thus uses a series of metaphors which convey the characteristics of such an 'absolute flux', such as 'flux' itself, but also source-point, continuity, and so on.

¹⁷⁷ 'the originary now and its modifications' (free translation).

But how can one be aware of the unity of such an absolute flux? It is primordial to answer this question, otherwise the *duration* of the temporal objects themselves is not explained. Indeed, immanent temporal objects are characterized by duration. If one leaves temporal objects out of the discussion at this third level, one needs to make sense of the unity of the absolute flux in order to derive every moment of consciousness as a moment of this primordial flux. Now if one is to speak of *one* consciousness, one needs to say something about the *unity* of the absolute flux. Husserl's solution is articulated along the idea that the unity of the absolute flux of consciousness is formed *at once* with the constitution of immanent temporal objects: they are both constituted in 'the same flux of consciousness' by what he terms a 'duality in the intentionality of the retention', an avowedly shocking solution. In a word, one can be conscious of the unity of the flow of consciousness because in the unity of a memory (the 'past, present, future' of a past now form a unity in my *retentional* consciousness of it), the flow itself is constituted as a unity. It is worth quoting him at length here,

The duality in the intentionality of retention gives us a clue to the solution of the difficulty concerning how it is possible to be aware of a unity belonging to the ultimate constituting flow of consciousness. Without doubt a difficulty does present itself here: if a self-contained flow (one that belongs to an enduring process or object) has elapsed, I can nevertheless look back on it; it forms, so it seems, a unity in memory. Hence the flow of consciousness obviously becomes constituted in consciousness as a unity too. The unity of a tone-duration, for example, becomes constituted in the flow, but the flow itself becomes constituted in turn as the unity of the consciousness of the tone-duration. And must we then not also go on to say that this unity becomes constituted in an altogether analogous way and is every bit as much a constituted temporal series, and that one must therefore surely speak of a temporal now, before and after? In the light of our latest explanations, we can give the following answer: There is one, unique flow of consciousness in which both the unity of the tone in immanent time and the unity of the flow of consciousness itself becomes constituted at once. As shocking (when not initially even absurd) as it may seem to say that the flow of consciousness constitutes its own unity, it is nonetheless the case that it does (Husserl, 1991, p. 84).

And, a few pages later,

Consequently, *two* inseparably united *intentionalities*, requiring one another like two sides of one and the same thing, are interwoven with each other in the one, unique flow of consciousness (...) The flow of the consciousness that constitutes immanent time not only *exists* but is so remarkably and yet intelligibly fashioned that a self-appearance of the flow necessarily exists in it, and therefore the flow itself must necessarily be apprehensible in

the flowing. The self-appearance of the flow does not require a second flow; on the contrary, it constitutes itself as a phenomenon in itself (Husserl, 1991, pp. 87-88).

How Husserl conceives of time as a 'self-constituting' absolute flux of consciousness will then give rise, as we will see below, to the time of the world, to objective time. But there is much to say on these derivations operated by Husserl. In these, the derivation of objective time from an absolute flux of consciousness, we find an expression of temporal alienation. Let me look at this more closely.

*

As mentioned above, Ricoeur reaches the conclusion that both Aristotle and Husserl fail to submit time to a unitary conception (Ricoeur, 1985; see also Osborne, 1996, p. 49). Ricoeur's own failure to see unity in Aristotle's thought was expressed in his accusation that Aristotle reduces the temporality of past, present and future to the subject's consciousness of its position with regards to an objective time of serial succession. He went on to conclude that Aristotle had left 'unsolved' the problem of the relationship between human soul and time (Ricoeur, 1985, p. 21), while I have noted earlier how the constituted meaning of numbers could provide a source of solution to the 'problem', and that Aristotle's conception of time was not operating inside this modern dichotomy.

Meanwhile, Ricoeur's critique of Husserl takes the opposite form of what he had charged Aristotle with. Indeed, for the French philosopher, Husserl does the opposite of what Aristotle did: he reduces the objective time of serial succession to the temporality of past, present and future of the subject's consciousness. While I disagree with Ricoeur's critique of Aristotle for the reasons mentioned, I agree with the basic idea behind his critique of Husserl: the German phenomenologist has not provided a unified account of time; he has *reduced* objective time to absolute consciousness in an aporetic way.

Put in Ricoeur's terms of a 'failure of unity', the critique of Husserl might seem somehow odd at first glance, since Husserl seeks to provide, as we have seen, a *unitary* conception of time-consciousness. This is expressed in his claim to have founded the whole time-field of consciousness in the 'absolute flux'. Indeed, for the German

phenomenologist, what has to be posited to preserve the very unity of consciousness is the possibility of a unity of experience. As just seen, he had wanted to get at the whole phenomenological time-field of the pure Ego as a unified experience; he had thus defined phenomenological time as 'this *unitary* form of all experiences within a single stream of experience (that of one pure Ego)...' (Husserl, 1962, p. 215, my emphasis).

But while he looks for the unity of the experience of time, Husserl nonetheless *begins* his discussion by *radically separating* worldly (objective) time and phenomenological time. It is only with the latter that he is concerned, as it 'demands a *separate* discussion' (Husserl, 1962, p. 215, my emphasis). Indeed, throughout his endeavour, Husserl focuses on 'objective' time only in so far as it 'declares itself' in the phenomenological realm. He is not concerned with the empirical origin of experiences of time, but rather with experiences of time as constitutive of its objectivity, 'we do not fit experiences into any reality' (Husserl, 1991, p. 9). The 'empirical being' of experience is not of concern to the phenomenology of time. As such, the *apriori* temporal laws *essentially belong* to time-consciousness: worldly time plays no part in their constitution.

The rejection of world time is thus rooted in Husserl's very philosophical *apriori*: 'Just as the actual thing, the actual world, is not a phenomenological datum, neither is world time, the real time, the time of nature in the sense of natural science...' (1991, p. 5). In this sense, the dichotomy between the time of nature and the time of experience is thus reinforced by the very epistemological stance of Husserl's philosophy. The time of the world, here in Husserl, is not a constitutive part of human experience, it is not the same thing, and does not enter the discussion of 'time'. Indeed, the 'time' that is 'assumed' to exist is not the 'time of the experienced world'; the only time that exists, that *is*, is rather the '*immanent time* of the flow of consciousness' (Husserl, 1991, p. 5).

If such a dichotomy is posited from the start, how can Husserl arrive at a unitary conception of time? The only way for Husserl to 'unify' time is precisely to reduce it to an absolute dimension of the Ego, *and then to subsequently derive 'objective' time from the absolute flux of consciousness*. However, the price to pay in order to 'unify the experience' of time has thus been to radically separate it from the world *from the very*

start, to operate what is often called a 'phenomenological reduction', which consists in 'bracketing away', suspending from the analysis, any presupposition of anything resembling 'transcendence', of any existing 'world-out-there': 'inherent' in a phenomenological analysis of time-consciousness is 'the complete exclusion of every assumption, stipulation and conviction with respect to objective time' (Husserl, 1991, p. 4). But, as Ricoeur soundly points out, Husserl never quite succeeds in this *Ausaltung* of worldly time, as he is forced either to repetitively borrow features from objective time – such as the ideas of succession, continuum and multiplicity – in order to analyze 'immanent' time, or to postulate a metaphysical correspondence between the flow of consciousness and the flow of the world which he had separated beforehand.

It is such a shorthand, this *apriori Ausaltung*, which leaves Husserl unable to avoid deriving objective time from immanent time in order to still be able to talk about unity at all. Indeed, Husserl posits objective time as a product of time-consciousness. For example, before and after are not immediate data of consciousness, but the product of the play between levels of intentionality stemming from the difference Husserl posits between retention and recollection.¹⁷⁸ In this sense, *succession* is a formal property of time not to be found in the world, but in a pre-contemplative interrelatedness which 'lies before all "comparison" and all "thinking" as the presupposition of the intuitions of likeness and difference' (Husserl, 1991, p. 46). Husserl thus derives the formal aspect of time from internal operations of the mind predicated, in the last instance, on the self-constitution of consciousness' 'absolute flux', which itself is constitutive of the whole formal temporal mode of appearance of *Zeitobjekte* – recall that the 'now', for example, is a mode of appearance for an object, not the object itself (1991, p. 388).

¹⁷⁸ Recollection is absolutely different from retention, it can constitute enduring objectivities, while retention only 'holds in consciousness what has been produced and stamps on it the character of the "just past"' (Husserl, 1991, p. 38). While retention can be said to be perception in so far as it 'constitutes originally', recollection can't give something before our eyes, but only re-present it, 'I can relive the present, but it cannot be given again' (Husserl, 1991, pp. 43, 45). Representing is also free, and entails a potentiality of error with regards to succession, while retention, as part of perception, is something 'at which we can only look', i.e. not free in the same sense, and which is 'absolutely certain' with regards to the perception of succession (Husserl, 1991, pp. 49-51). On these points see also Ricoeur (1985, pp. 67-72).

Succession as such a form – the internally produced chain of time – forms the basis upon which what Husserl calls ‘objective time’ is built. This time is fixed, identical, and homogeneous. It also has to be unitary. Here, the role of reproduction in the constitution of ‘one’ objective time is crucial. Indeed, there has to be a link, a common ground, between a reproduced time-field and the actually present-now. It is a requirement that even ‘phantasied’ time must exist ‘as an extent within the one and only objective time’ (Husserl, 1991, p. 73). In the temporal fields succeeding one another, one linear order emerges: objective time. Let us read Husserl directly here,

One will perhaps ask in this respect how, in these temporal fields succeeding one another, the one objective time with its one fixed order comes about. The continuous coinciding of the temporal fields in temporal succession, offers the answer. The coinciding parts are individually identified during their intuitive and continuous regression in the past. Let us assume that we proceed back into the past from any actually experienced time-point – that is, from any time-point originally given in the temporal field of perception or from some time-point that reproduces a remote past – and that we move, as it were, along a fixed chain of connected objectivities that are identified over and over again. Now how is the linear order established here according to which any extent of time whatsoever, even one that is reproduced without continuity with the actually present temporal field, must be part of a single chain continuing up to the actually present now? Even an arbitrarily phantasied time is subject to the requirement that it must exist as an extent within the one and only objective time if one is going to be able to think of it as actual time (1991, pp. 72-3).

Objective time, as it were, is founded in the ‘preobjectivated time’ of pure consciousness, ‘the preobjectivated time belonging to sensation necessarily founds the unique possibility of an objectivation of time positions’ (Husserl, 1991, p. 74). But remember that it is this very objective time that Husserl had bracketed away at the start of his inquiry: world time, just as the world itself, is not a phenomenological datum. Now, in order to reach a unitary conception of time, Husserl reintroduces objective time: in his search for unity, Husserl has to account for the objective time he had left out at the start. However, having conceptualized time as absolute subjectivity, he is left with no choice but to *derive* objective time from consciousness’ absolute flux. As such, it is in the absolute flux of absolute subjectivity that the world itself is constituted; physical things exist, from a Husserlian point of view, only in so far as they are constituted through consciousness, understood as this absolute flow,

The appearing physical thing becomes constituted because unities of sensation and unitary apprehensions become constituted in the original flow; and therefore the consciousness of something, the exhibition – or more precisely, the presentation – of something, and in the continuous succession the exhibition of the same thing, constantly becomes constituted (Husserl, 1991, p. 97).

The three levels of time which we end up with, namely the objective time as derived from immanent time, which is itself the product of the play of a twofold intentionality in which the absolute flux of consciousness constitutes itself, appears here as an attempt to preserve the unity of time, since even though Husserl does not want to collapse transcendent and immanent time, these successive derivations do provide some sense of unity. However, this very ‘absolute flux’ does itself seem, as Ricoeur suggests, difficult to flesh out without any implicit *a priori* reference to ‘objective time’. The very oneness, unity, of the absolute flux seems predicated on the very idea of objective time as a linear extent of successive time positions.

A few words on this operation of ‘reduction’ might help us grasp what it is exactly that Husserl ‘brackets away’ at the very start of his enquiry, and subsequently derives from the ‘absolute flux’.

Brough’s meticulous analysis of the constitution of Husserl’s *On the Phenomenology of the Consciousness of Internal Time* helps us in the analysis of this issue (Brough, 1991, pp. XX-XXIV). Indeed, as Brough explains, this publication by Husserl entailed some serious editing, not from Heidegger, even though he is mentioned as the editor of the original publication in 1928 and did perform editing work on the manuscript, but rather from Edith Stein, Husserl’s assistant in Freiburg from 1917 to 1919. Stein’s work has been criticized on the grounds that she made significant changes, not the least of which was to have pasted together notes which were written as far apart than 1901 and 1917, and ‘added’ ‘mature’ Husserlian conceptual expressions on chronologically earlier notes. This is neither the place nor time to embark on extensive considerations on this specific instance of editing,¹⁷⁹ but one interesting point stems from

¹⁷⁹ Readers should see Brough (1991) for details.

all of this, a point that might get lost in a reading that does not take these issues into account.¹⁸⁰

The point here is simply that Husserl's '*Ausaltung*', the famous 'phenomenological reduction' which structures Husserl's philosophy, is not a once-and-for-all determined philosophical operation, but rather one that has evolved and come to maturity only progressively. The phenomenological reduction, with respect to the phenomenological analysis of time, is thus not a reduction, a 'bracketing away' from one and the same thing, but what precisely is 'bracketed away' from, changes in the development of Husserl's thought on the matter.¹⁸¹

Brough identifies as many as four stages in this development, but it is the last two stages that appear important here, since it is not the same thing in each of those that Husserl brackets away from as a presupposition of his whole study of time. In the third stage, around 1905, what Husserl posits as the 'outside' of phenomenological time is a conception of 'objective time', the empirical side of the experience of time, its 'factual dimensions', governed by natural laws. This leads him, in this period, to statements such as 'One cannot discover the least thing about objective time through phenomenological analysis' (Husserl, 1991, p. 6). In other words, what Husserl brackets away here is natural time, the time of the empirical 'objective' natural world.

In the fourth stage however, situated by Brough after 1909, what Husserl brackets away is not 'natural time' taken as an objective feature of nature, but rather, very tellingly, the techniques and instruments employed in time-measurement. What Husserl is here leaving outside of the analysis of time is precisely clocks (and chronometers). It is here clock-time which forms the 'other', 'silenced' outside, of the phenomenological inquiry of time. It is thus more straightforwardly 'social' time, and not merely 'natural' time, which is the object of the phenomenological reduction. Brough emphasizes that what Husserl wishes to do here is to distance phenomenology from the physical sciences, 'clocks and chronometers' being described by Brough as instruments employed by the

¹⁸⁰ Ricoeur, which is otherwise acutely aware and accounting for such details, does not take this specific point into account (probably because Husserliana X, on which Brough relies, was not available to him).

¹⁸¹ It is this development, in short, which is obscured by Stein's editing techniques.

natural sciences in determining time (Brough, 1991, p. XXII). However, what Brough overlooks, and which goes without saying in the context of the present study, is that clock-time is not a mere scientific instrument in Husserl's socio-historical context, but rather a hegemonic form of social time relation. As such, what appears first as alienated from human experience, and then merely derived from it, is not merely 'natural' time, or 'instruments of the natural sciences', but time's very *social* form. The objectification and alienation of social time thus appear here, in Husserl's very *presuppositions* about time.

Socio-historically speaking, then, Husserl expresses a fundamental aspect of alienation in capitalist social time relations, in treating worldly time as radically separated from human time, and social time itself as something to be put aside, bracketed away, eliminated, suspended (*Ausaltung*) from the philosophical inquiry of time. Indeed, it is hard not to read Husserl's 'objective time', the positions of which 'we can determine by means of a chronometer' (1991, p. 7) as *clock-time*, which is itself, as we have seen, not a universal 'time of the world', but a socio-historically constituted form of social time relation. What Husserl has initially bracketed out, and later reintroduced as a product of the internally produced 'chain of time', is itself abstract clock-time, which in Husserl's context, is becoming the hegemonic form of (alienated) social time relation.

It is this historical insight which is lacking in Husserl's philosophy of time. 'Disregarding all transcendencies' (1991, p. 24), Husserl is unable to sketch out any kind of socio-historical mediation between consciousness and the world. He does not see consciousness as a historico-natural product, but rather as an a-historical and universal Ego. He overlooks the fact that evolution and history are not 'outside' of conscious experience - on the contrary, consciousness, evolution and history mediate each other. This means that evolution and history have left traces in our consciousness (just as our consciousness leaves traces in evolution and history). Husserl seems to bracket all of this away, look at the results of the relationship between consciousness and time, and posit them as belonging *essentially, immanently* to consciousness. The essence of time, then, is looked for in an a-historical Ego. Time becomes 'my time', the time of absolute consciousness, disregarding that 'my time' is inseparable from nature and sociality, or, as

Adam puts it, 'a moment of 'my' time, is never just that. It is inseparable from 'our' times, the times of the environment and the social collectivity' (Adam, 1995, p. 19).

As such, the Husserlian derivation of 'objective time' from the absolute flux of consciousness not only fails at establishing any form of historical mediation of the relationship between humans and their world, it also fails at providing a unitary conception of time, i.e. a conception that can account for the socio-historical constitution of forms of social time relations, and as such for the socio-historically specific and transient forms of time-consciousness. The 'objective' time which derives from Husserl's absolute consciousness is thus not historicized: the Ego which gives rise to 'objective' time in the form of clock-time is posited as universal and trans-historical, while this form of 'objective' time is a specific socio-historical product rooted in alienated social time relations.

Heidegger and the fall

This fundamental alienation of the worldly (socio-natural) aspect of time takes a different but even more radical shape in Martin Heidegger's *Being and Time*.¹⁸² Ricoeur suggests that Heidegger's re-articulation of phenomenology as an ontological discourse of *Dasein* brings the phenomenological conception of time further, beyond, so to speak, the problem of the human/nature or subject/object dichotomy since it takes the question away from a theory of knowledge and inscribes it at the level of a mode of being (Ricoeur, 1985, pp. 112-3, 116). I would like to argue that Heidegger's existential analysis of temporality (*temporalität*) results in an *ethical* rejection of socio-natural time – 'vulgar', 'common' or 'ordinary' time in Heidegger's own words – based on a derivation of world time from a 'levelling off' of original (*Dasein*'s authentic) temporality. More precisely,

¹⁸² My discussion of Heidegger will be mostly based on *Being and Time*, notwithstanding refutations that could or would have come after its publication in 1927, from Heidegger himself or his disciples, based on the issue of 'anthropologism' or any other. In this I follow Ricoeur and others who have treated *Being and Time* as a work in its own right (supplemented by texts which can be found in Martin Heidegger (1988), *The Basic Problem of Phenomenology*, Bloomington, Indiana University Press. My reading of *Being and Time* is sometimes based, for practical reasons, on the French translation by François Vezin (based on the work of Boehm, de Waelhens, Lauxerois and Roëls): Martin Heidegger (1986). My discussion is also based on Ricoeur's own reading, and also Osborne's (1996). The reader might want to consult these discussions as a background to mine, which is limited to the exhibition of temporal alienation through ethics, since they cover a larger ground.

Heidegger deems as inauthentic and derivative not only 'natural time' as cycles of change in nature, but also social, 'public' time. In this inauthenticity, we find an expression of temporal alienation.

Whereas Husserl excluded socio-natural time from his endeavour, only to bring it back at the very end as a derivative from the absolute flux of consciousness, Heidegger also rejects it, before positing it as a form of temporality deriving from an inauthentic mode of being. The exclusion of natural time is explicit in Heidegger, 'there is no natural-time, since all time belongs essentially to *Dasein*' (1988, p. 262). The time of the world as we know it is but a 'fallen' form of time related to *Dasein*'s inauthentic mode of being predicated on preoccupation, while for Heidegger, authentic and original temporality is predicated on the temporal structure which articulates *Dasein*'s authentic mode of being: care (*sorge*). Heidegger, then, does not merely derive world time from 'original' temporality, but further articulates their relationship through an ethical stance.

There is no question that Heidegger's work offers an immense contribution to the understanding of the concept of time. *Being and Time* is a work of formidable proportions, both in how it fleshes out an innovative path for phenomenology, but also in the monumental – mostly etymological – working of language which its conceptual apparatus displays. The point here is not to assess the 'truth' of the enterprise, nor to dwell into never-ending philosophical considerations on the topic. It is rather, more simply and more humbly, to show how aspects of Heidegger's thinking on time expresses temporal alienation through a conceptual vocabulary based on 'forgetting', 'levelling off' and 'inauthenticity'.

The problem of the distinction between authenticity and inauthenticity thus looms large here. This problem revolves around *Dasein*'s 'modes of being'. Heidegger seeks to unveil the authentic mode of being of *Dasein*, its structural – and temporal – unity and finitude, as *care*, a mode of being predicated on the 'resolute anticipation of death'. The history of the West, for Heidegger, is characterized by the veiling of authentic being, and the development of inauthentic 'modes of being', based on an inauthentic self-understanding of *Dasein* as an 'entity'. Indeed, what Heidegger means by 'inauthentic'

ranges across different problems and issues, but is rooted primarily in a mode of being of factual *Dasein* which understands itself 'via intrawordly beings which he encounters' and

let[s] its existence be determined primarily not by itself but by things and circumstances and by the others (...) Inauthentic denotes an understanding in which the existent *Dasein* does not understand itself primarily by that apprehended possibility of itself which is most peculiarly its own (Heidegger, 1988, p. 279).

As such, since modes of being can be authentic or not, modes of temporality can also be deemed 'authentic' or not: authentic time, understood by Heidegger as *Dasein*'s original temporality, can give rise to inauthentic time.

Original temporality vs inauthentic temporality: care vs preoccupation, future vs present

It is indeed possible to read Heidegger as expressing philosophically the temporal alienation of human beings which is a prominent feature of his own socio-temporal context. Here, temporal alienation is expressed in the way in which the 'technic' of calendars and clocks, for Heidegger, is an *inauthentic* mode of temporality which 'covers up' the true temporal mode of being of *Dasein*. Alienation is thus expressed through an *ethic* of the 'proper' and the 'improper'. Importantly, this recognition of alienated time is linked to one of the most powerful of Heidegger's ideas. Indeed, clock and calendar time is alienated - 'inauthentic' - time because it produces a conception of time as infinite, endless and successive moments, instead of recognizing *Dasein*'s *finite* temporality; its *death* (Heidegger, 1962, p. 467). Let me look at these matters more closely.

Original temporality: care and the future.

One of the main questions which drives Heidegger's conception of time is the question of unity. On the one hand, the unity of *Dasein* is articulated through the concept of care, while on the other hand, this unity touches on the question of temporality. Indeed, care, as an authentic mode of being, itself articulates the unity of temporal ekstases (past, present and future) in a specific 'authentic' way. The unity of temporal ekstases predicated on care here differs from the conception we had encountered in both

Augustine and Husserl. While for Augustine, the unity of time was predicated on what Ricoeur calls the present's 'triplification' (Ricoeur, 1985, p. 117), which based the dispersion and articulation of past and future on the present, Husserl had posited the law of modification of modes of consciousness (impressional and retentional) as the articulation of time's unity from a present point-source.

Heidegger, on his part, rejects the idea of founding the unity of past, present and future on the dispersive and articulative power of the present. For him, original temporality, the original unity of past, present and future is rather predicated on the *future*: it is the resolute anticipation of death – itself a characteristic of *Dasein*'s authentic mode of being of care - which founds original – authentic - temporality. The question of death was introduced by Heidegger as the horizon of the wholeness of *Dasein*; as such, the question of death and the question of time are intimately related. Indeed, death is the futural temporal horizon which makes *Dasein* into a *finite* being: the anticipation of death gives *Dasein* its existential finitude. As such, it unifies *Dasein* as a structural whole.¹⁸³ Authentic temporality is thus *futural*, as Heidegger puts it,

When we are expecting any particular happening, we comport ourselves in our *Dasein* always in some particular way toward our own most peculiar ability to be. Even if what we are expecting may be some event, some occurrence, still our own *Dasein* is always conjointly expected in the expecting of the occurrence itself. The *Dasein* understands itself by way of its own most peculiar capacity to be, of which it is expectant. In this comporting toward its own most peculiar capacity to be, *it is ahead of itself*. Expecting a possibility, I come from this possibility toward that which I myself am. The *Dasein*, expecting its ability to be, *comes toward itself*. In this coming-toward-itself, expectant of a possibility, the *Dasein* is *futural* in an original sense' (Heidegger, 1988, p. 265).¹⁸⁴

It is such a 'futural' temporal stance of authentic caring *Dasein* which brings forth the 'unity of ekstases', the unity of past, present and future, in an original and authentic way.¹⁸⁵ Indeed, temporality, for Heidegger, is this phenomenon which reveals itself as the

¹⁸³ Death also individualizes *Dasein*, it is the 'non-relational'; death can only be mine, I can't experience the other's death *qua* death, no more than the other can experience my death *qua* death. So long as death *is*, it is mine, my anticipation of death thus individualizes me.

¹⁸⁴ Osborne points out that although *Dasein* is hence 'futural', 'such futurity 'exists' only as the projected horizon of a present defined by the mode of its taking up of a specific past' (Osborne, 1996, p. 59).

¹⁸⁵ According to Osborne's reading of Heidegger, it is the constant differentiation of this unity (in past, present and future) that defines temporality as something 'outside of itself'. *Dasein* is thus essentially

meaning of authentic care: it is revealed in this unifying phenomenon proper to care, where the future 'makes present in the process of having been',

Coming back to itself futurally, resoluteness brings itself in the Situation by making present. The character of "having been" arises from the future, and in such a way that the future "has been" (or better, which "is in the process of having been"), releases from itself, the Present. This phenomenon has the unity of a future which makes present in the process of having been; we designate it as "temporality". Only in so far as Dasein has the definite character of temporality, is the authentic potentiality-for-being-a-whole of anticipatory resoluteness, as we have described it, made possible for Dasein itself. *Temporality reveals itself as the meaning of authentic care* (1962, p. 374).

As Ricoeur notes, it is care, then, as a mode of being of *Dasein*, which makes temporality possible (1985, p. 131). This means that all forms of temporality, authentic or not, find their roots in this original temporality. The path from this authentic time to forms of inauthentic time is described by Heidegger as a 'fall',

the covering-up of the specific structural moments of world-time, the covering up of their origination in temporality, and the covering up of temporality itself – all have their grounds in that mode of being of the Dasein which we call *falling* (Heidegger, 1988, p. 271).

As mentioned above, it is the future which provides the unity of temporal ekstases: authentic time is founded in *Dasein*'s futural stance. Inauthenticity, for its part, derives from modes of temporal unity predicated either on the present or on the past. These are deemed 'inauthentic', since they are not predicated on care. Heidegger indeed derives 'intratemporality', the mode of temporal unity predicated on the present, and 'historiality', the mode of temporal unity predicated on the past, as 'fallen' modes originating from original – futural - temporality.

Intratemporality is a mode of temporal unity which is responsible, according to Heidegger, for the 'vulgar', or 'ordinary' conception of time: the worldly socio-natural time of calendars and clocks. Predicated on the *present*, it is a mode of temporality associated not to care, but to its fallen form of *preoccupation*. Accordingly, vulgar time, predicated on a 'presentist' preoccupation, for Heidegger, is a fallen form of time

outside of itself. It is this exteriority through the temporal unity of ectases that opens the individual out onto history (Osborne, 1996, p. 59).

derivative of original temporality, and its origin is 'covered-up' to *Dasein* in inauthentic preoccupation.

The – inauthentic - mode of being on which such a fallen conception of time is predicated is preoccupation, in which *Dasein*, in his everyday commerce with given and handable things, forgets its finitude – which it can understand only authentically in its futural stance – and adopts a mode of temporality predicated on the *present*. In such a temporal mode, time appears as an extant since, alongside movement – in the vulgar conception – time, connected with nature, must necessarily also be an extant. Vulgar time thus appears as an *infinite* succession of nows, the 'intrinsically free-floating runoff of a sequence of now' (Heidegger, 1988, p. 272). For Heidegger, in this derivated, inauthentic mode of (intra)temporality, *Dasein* mistakes itself for a thing-in-the-world,

It now becomes clear why we do not call a being like a stone temporal, even though it moves or is at rest in time. Its being is not determined by temporality. The *Dasein*, however, is not merely and not primarily intratemporal, occurring and extant in a world, but is intrinsically temporal in an original, fundamental way (Heidegger, 1988, p. 271).¹⁸⁶

This relationship between preoccupation, defined as engagement with worldly things, and inauthentic time *qua* worldly – socio-natural – time, speaks aloud to the socio-historical context of temporal alienation. Here Heidegger is – albeit from a different set of philosophical and ethical concepts – gesturing to the temporal alienation stemming from the fact that humans' everyday engagement with 'worldly things', their everyday engagement with reproductive practices, occurs in a social mode of time characterized by the alienation of concrete times by an abstract form of time which has historically evolved into the dominant form of social time in Heidegger's context. Let me continue with Heidegger's conceptions.

Heidegger wanted to overcome the aporia between objective and subjective time in ascribing temporality within *Dasein*. However he reproduces the aporia, as Ricoeur points out, at the level of ethics, in the distinction between *authentic* time (*Dasein*'s) and its derived *inauthentic* form (objective-cosmological time). For Heidegger, 'ordinary' time is a levelling-off, or a covering-up, of the primordial temporality of 'within-time-

¹⁸⁶ The mode of temporality predicated on the *past*, historicity, is also, in Heidegger's terms, inauthentic.

ness'. It is furthermore a lower order of temporality, associated with the *public* time of the 'they'; this is the 'public' time of clocks and calendars, of independent, alienated and reified abstract time-units: as such, as we have seen, this is a socio-historically specific form of social time relation, and not a transhistorical form. *Dasein* does not recognize this time as its own, but uses whatever time 'there is'. As Osborne summarizes this issue, 'in presenting time as continuous (as opposed to ekstastic), and independent of *Dasein*, the ordinary conception marks itself off as the product of a fallen *Dasein*, an inauthentic mode of time-consciousness' (Osborne, 1996, p. 64). Time appears as infinite, since it is an attribute of the 'they', whereas *Dasein* is finite through death. Indeed, since death *qua* death is 'mine', since for Heidegger it individualizes *Dasein*, original temporality is finite, while since the 'they' never dies, 'vulgar' time is infinite.

However, Heidegger's take on time does not recognize the historical multiplicity of social time relations. He merely posits one 'public' time, but does not see it as a specific socio-cultural product. Nonetheless, he expresses features of his own socio-historical context in so far as his understanding of 'vulgar' time is closely related to what I have identified in the preceding chapters as the social time relation of clock-time. As such, one can sense, in the fundamental rejection of worldly time as 'inauthentic' by Heidegger, the expression of the fundamental alienation which characterizes worldly time in a capitalist context. Indeed, Heidegger, derives world time from *Dasein*'s mode of being, but in doing so he recognizes and conceptualizes how this 'time of the world' is inauthentic to human beings. This 'time of the world', the 'objective time' of clock time and calendars, does seem, in Heidegger's treatment of it, as the product of a fallen mode of being. Temporal alienation is thus expressed in ethical terms in a philosophy of time which tackles the problem of the inauthenticity of alienated social time. Temporal alienation between humans and their world is here expressed as a loss of authenticity. While for Heidegger 'all time belongs essentially to *Dasein*', the fall from original temporality to vulgar time covers-up *Dasein*'s true temporal nature. Social 'vulgar' time relations, here, cover up *Dasein*'s very truth.

Heidegger, however, does not relate this 'path to inauthenticity' to any socio-historical development or social relation of power. His stance explicitly forbids such a perspective, as his view of the history of the 'West' portrays it as an idealistically unfolding history of metaphysics. As such, he is incapable of seeing the 'path to this form of inauthenticity' as a socio-cultural development, rooted in social conditions. Both *Dasein's* authentic and inauthentic modes of being are abstracted from any form of socio-historical context, and as such, both 'authentic' and 'inauthentic' times are themselves a-temporal – a-historical - categories. Indeed, as Osborne (1996) points out, does not the fact of death itself presuppose a socio-natural time? Furthermore, does not the recognition of death and of temporal finitude itself presuppose, rather than produce, a socio-natural 'time of the others', from which multiple socio-historically and culturally specific consciousness of death and of time develop? As a final critical comment here, Osborne's Hegelian critique of Heidegger's individualist stance might be worth quoting,

Being can only be there in Heidegger's sense of presenting itself as the object of inquiry for a fundamentally self-interpreting entity, if this entity has been previously constituted as an entity of this kind (self-conscious being) through a process of mutual recognition. Furthermore, it is only through this process of mutual recognition constitutive of *Dasein's* consciousness of itself as a self-interpreting being that *Dasein* can acquire the sense of death in the first place (Osborne, 1996, p. 71).

In this very specific sense, then, Heidegger's conception of time displays temporal alienation in the form of temporal alienation from oneself (the fall), and temporal alienation from 'others', i.e. society, as well as nature, the temporalities of which are 'inauthentic'.

Henri Bergson

Another fundamental contribution to the philosophy of time from this period which left an indelible trace in the literature is that of Henri Bergson. He, too, expresses temporal alienation in a specific manner, by situating human freedom in the realm of concrete 'inner' time, the time of '*durée*'. By doing so, he radically separates human freedom from the abstract 'homogenous' time of clock-time, which in Bergson's context, has become the socially dominant alienated form of 'the time of the world'.

There are many ways in which one can narratively organize Bergson's contribution. Since his work is probably, with Husserl's and Heidegger's, the most important philosophical contribution on the concept of time, I need to endeavour a bit into its conceptual architecture, although an exhaustive study of all of his writings is outside of the scope of this discussion. In this short endeavour, I shall instead isolate specific points of his philosophy of time through which we can make sense of his major arguments, and which highlight the temporal alienation to which Bergson's philosophical subject, in this case human *consciousness*, is subjected.

In a way close to Husserl's approach, one can describe Bergson's philosophy not only as a philosophy of consciousness, but also as a philosophy of *time*, since time and consciousness, for Bergson, are inseparable. Indeed, for the French philosopher, consciousness is fundamentally *temporal*, 'le fond même de notre existence consciente est mémoire, c'est-à-dire prolongation du passé dans le présent, c'est-à-dire enfin durée agissante et irréversible' (Bergson, 1959, p. 20).¹⁸⁷

Bergson's definition of time implies that there is no time without consciousness, in the sense that there is no time without memory. By this Bergson surely means that time is within 'us-as-conscious-beings', although, more specifically, he means that there is no time if it is not perceived and lived, if it is not conceived of. Indeed, on the issue of 'worldly', impersonal and universal time, Bergson's conception is akin to one of 'block-time', or tenseless world, which we have already seen lurking in the fabric of Augustine's arguments. Such a conception puts forward the idea that past, present and future are subjective distinctions, and that world time is always-already given in a block, so to speak, in opposition to a conception that would emphasize the 'tensed' aspect of worldly time.¹⁸⁸ While, as we will see, inner time is conceptualized by Bergson along the lines of becoming, worldly time for its part is 'all of one piece', 'le Temps impersonnel et universel, s'il existe, a beau se prolonger sans fin du passé à l'avenir : il est tout d'une

¹⁸⁷ 'The very core of our conscious existence is memory, i.e. the continuation of past into present, i.e., after all, active and irreversible *durée*'. (free translation).

¹⁸⁸ See also appendix A for more on this.

pièce' (Bergson, 1968, p. 39).¹⁸⁹ It is consciousness which divides this block-time by symbolizing it, otherwise the movement of universal time is indivisible (Bergson, 1968, p. 39).

Consciousness comes to measure time because we register the effect of movement, its trace, and we symbolize it, in a line for example. Movement for Bergson is indivisible; it is the transportation of a state, rather than the transportation of a thing. The trace left in space by movement, at the root of its symbolization in a spatially extended line, is measurable, and this is what makes the measurement of time possible.¹⁹⁰ For example, the trace left by the movement of the earth around the sun is symbolized as a year.

Bergson's argument here is thus quite straightforward: no concept of time is intelligible without the basic *conscious* operation of the linking together of two instants, which is the simplest operational definition of memory. In other words, it is impossible to link two instants in a 'before *and* after' relationship, to conceive of time without memory, without consciousness. Hence, to say that there is time 'in the world' implies that memory links together instantaneous moments of the world, that it 'introduces' time in the world, which would otherwise be inconceivable,

On devra considérer un moment du déroulement de l'univers, c'est-à-dire un instantané qui existerait indépendamment de toute conscience, puis on tâchera d'évoquer conjointement un autre moment aussi rapproché que possible de celui-là, et de faire entrer ainsi dans le monde un minimum de temps sans laisser passer avec lui la plus faible lueur de mémoire. On verra que c'est impossible. Sans une mémoire élémentaire qui relie les deux instants l'un à l'autre, il n'y aura que l'un ou l'autre des deux, un instant unique par conséquent, pas d'avant et d'après, pas de succession, pas de temps (Bergson, 1968, p. 38).¹⁹¹

¹⁸⁹ 'Impersonal and universal Time, if it exists, may well continue without end from past to the future, it is all of one piece'. (free translation).

¹⁹⁰ On movement see Bergson (1965, pp. 111-132).

¹⁹¹ 'We will consider one moment in the unfolding of the universe, i.e. an instant which would exist independently of any consciousness, and we will try to evoke it in conjunction with another moment as close from the former as possible, and to thereby introduce a minimum of time without letting the slightest gleam of memory go through with it. We will see that this is impossible. Without an elementary memory which links the instants together, there will only be one or the other, thereby a unique instant, no before or after, no succession, no time'. (free translation).

This inextricable relationship between time on the one hand, and 'a before *and* an after' conceived as a *conscious* distinction on the other, then explicitly introduces some form of 'effectively present', or 'ideally introduced' consciousness in Bergson's very definition of time,

Tout le monde nous accordera en effet qu'on ne conçoit pas de temps sans un avant et un après : le temps est succession. Or nous venons de montrer que là où il n'y a pas quelque mémoire, quelque conscience, réelle ou virtuelle, constatée ou imaginée, effectivement présente ou idéalement introduite, il ne peut pas y avoir un avant et un après: il y a l'un ou l'autre, il n'y a pas les deux; et il faut les deux pour faire du temps (1968, p. 48).¹⁹²

A convenient point of departure for a discussion of the expression of temporal alienation in Bergson's philosophy of time is his distinction between 'physical' and 'mental' states, which shall lead us to consider the nature of the operations which, for Bergson, alienate humans from their true 'inner time', their true inner *durée*. While physical states 'in the world' might be straightforwardly quantifiable multiplicities, mental states are *qualitative* configurations of a multiplicity of 'simple states' (sentiments, sensations, ideas),

la plupart des émotions sont grosses de mille sensations, sentiments ou idées qui les pénètrent : chacune d'elles est donc un état unique en son genre, indéfinissable, et il semble qu'il faudrait revivre la vie de celui qui l'éprouve pour l'embrasser dans sa complexe originalité (Bergson, 1970, p. 15).¹⁹³

Accordingly, while physical changes might be changes in degree, changes in mental states are qualitative, 'complexly original'. For example, the 'growing' intensity of a feeling, based on a multiplicity of mental states, is not a mere quantitative *increase in sensation*, but more akin to a qualitative *sensation of increase* (Bergson, 1970, pp. 9-37; see also Abbott, 2001, p. 214, n.3). The origin of the problem of the quantification of quality here for Bergson is that we come to appreciate, relate and compare, qualitatively

¹⁹² 'Everyone will grant us that we do not conceive of time without a before and an after: time is succession. And yet, we have just shown that where there is no amount of memory, of virtual or real, recorded or imagined, effectively present or ideally introduced conscience, there can be no before and after: there is one or the other, but not both; and both are needed to make time'. (free translation).

¹⁹³ 'Most of our emotions comprise thousands of sensations, sentiments or ideas penetrating them : each of them is thus a unique state, indefinable, and it seems that we would have to relive the life of the person who feels it in order to embrace it in all its complex originality'. (free translation).

different experiences through words such as 'more' and 'less'. Qualitative modifications of the nature of a fundamental emotion, an aesthetic or moral feeling, a violent emotion, or even a muscular effort, its qualitative *progress*, comes to be interpreted as an increase in its magnitude (Bergson, 1970, pp. 12-19).

This distinction between quantity and quality, outer and inner, permeates Bergson's philosophy of time and the quantification of qualitative temporality figures prominently in the issues discussed. On this topic, Bergson posits that the qualitative multiplicity of our experience of time finds itself represented in a numerical multiplicity, and as such it is deployed in *space*. More specifically, the spatialization of time occurs *in* time's very representation, which is required for its measurement. Indeed, the 'representation' of time in spatial terms is implied in its measurement, its numbering, since 'l'espace est la matière avec laquelle l'esprit construit le nombre, le milieu où l'esprit le place' (Bergson, 1970, p. 42).¹⁹⁴ The very idea of an order of succession implies not only consciousness, memory, as pointed out above, but also, and crucially, spatial representation, 'L'idée d'une série réversible dans la durée, ou même simplement d'un certain *ordre* de succession dans le temps, implique donc elle-même la représentation de l'espace' (Bergson, 1970, p. 49).¹⁹⁵

Such a spatialization of time implies an alteration of its fundamental quality. As Abbott succinctly puts it, 'he [Bergson JM] feels that the association of spatial, quantitative ideas of order with the inclusional duration of temporality profoundly warps our image of time' (Abbott, 2001, p. 215). In other words, for the French philosopher, there is a profound temporal deception at work when we perceive of time as a quantity, rather than as a quality: and this deceiving operation originates from our tendency to measure time by representing it in space. His concept of duration '*durée*' is meant to combat the spatialization, i.e. the arbitrary separation of temporal states in the Ego from one another, and suggests the reconciliation of 'both past and present states into one

¹⁹⁴ 'Space is the matter with which the mind builds the number, the milieu in which the mind places it'. (free translation). On the spatialization of time see also Bergson (1968, pp. 39-45), among other discussions.

¹⁹⁵ 'The idea of a reversible series in *durée*, or even merely of a certain order of succession in time, therefore implies the representation of space'. (free translation).

organic whole' (Bergson, quoted in Abbott, 2001, p. 216). Let me look at this more closely.

First is the question of spatialization *per se*. For Bergson, since material objects are in space, to represent or 'number' them is an 'immediate' operation. However, mental states are 'in' consciousness, understood as durational. Hence Bergson's two types of multiplicities: multiplicity of material objects, which are immediately given in space for us to count them, and the multiplicity of inner states, which are not given in space. As such, in order to be able to represent mental states, we interpret them through the intermediary of counting, we create a symbolic *space* in which we can add them up, or in other words, we symbolically spatialize them,

D'où résulte enfin qu'il y a deux espèces de multiplicité : celle des objets matériels, qui forme un nombre immédiatement, et celle des faits de conscience, qui ne saurait prendre l'aspect d'un nombre sans l'intermédiaire de quelque représentation symbolique, où intervient nécessairement l'espace (Bergson, 1970, p. 43).¹⁹⁶

The spatialization of time occurs in a context in which the surface of the self 'touches' (Bergson, 1970, pp. 58, 74) the socio-natural world of objective causes, whose 'exteriority' makes them objectifiable, hence possible to separate, to count. Although spatialization is an operation of the mind, it is linked to an outside world which suggests to the mind the mental creation of such a homogenous temporal space.¹⁹⁷ We thus create a homogenous space in which our inner experience of time is ordered, numbered. The operation of spatialization, performed by this 'surface' part of the self, is then reproduced all the way down inside our intimate selves, spatializing not only 'surface' states, but also intimate ones.¹⁹⁸

¹⁹⁶ 'Whence two sorts of multiplicity: of material objects, which immediately form a number, and of consciousness' facts, which can't take on the aspect of a number without the intermediary of a symbolic representation, where inevitably one finds space'. (free translation).

¹⁹⁷ The intuition of a homogenous space is already a move toward social life (Bergson, 1970, p. 63), although Bergson does not establish the link between this intuition and the socio-historical character of abstract, spatialized, capitalist social time relations themselves.

¹⁹⁸ We can read in Bergson remains of a substratum of united self, 'beneath', so to speak, alienation and reification, which we can still catch sight of if 'we detach our eyes from the shadow which follows us'.

The net result, for Bergson, of the outward 'expansion' of intimate states at the contact between us and the socio-material world is the breaking apart of mental states, their reification, and their tearing away from us,

Mais à mesure que se réalisent plus complètement les conditions de la vie sociale, à mesure aussi s'accroît davantage le courant qui emporte nos états de conscience du dedans au dehors : petit à petit ces états se transforment en objets ou en choses ; ils ne se détachent pas seulement les uns des autres, mais encore de nous (Bergson, 1970, p. 63).

What is broken apart, reified and taken away from us, for the French philosopher, is thus the very substance of our intimate self, of our conscious existence which is itself fundamentally temporal. Bergson's philosophy thus expresses how social time, while reduced to a 'fourth dimension of space',¹⁹⁹ alienates true human temporality, *durée*, which is the major concept through which he aims at grasping the temporal *quality* of inner human experience. Indeed, *durée* is 'Une multiplicité qualitative, sans ressemblance avec le nombre; un développement organique qui n'est pourtant pas une quantité croissante; une hétérogénéité pure au sein de laquelle il n'y a pas de qualités distinctes' (Bergson, 1970, p. 100).²⁰⁰ It is this *durée*, which for Bergson is the 'true', 'real' and 'concrete' time;²⁰¹ the fundamentally qualitative time of human consciousness, which is alienated in its contact with the 'external' world.

The same argument which applied to mental states in general thus also applies to moments of inner human time. The moments of *durée*, which are qualitative

¹⁹⁹ For Bergson, homogenous time is but a fourth dimension of space, 'Immanente à notre mesure du temps est donc la tendance à en vider le contenu dans un espace à quatre dimensions où passé, présent et avenir seraient juxtaposés ou superposés de toute éternité' (Bergson, 1968, p. 45).

²⁰⁰ 'A qualitative multiplicity, without any resemblance to number; an organic development which is nonetheless not a growing quantity; a pure heterogeneity in which there are no distinct qualities'. (free translation).

²⁰¹ *Durée* is also referred to in Bergson's work as 'real' time and as 'concrete' time. Indeed, Bergson himself uses the distinction between concrete and abstract time, and he radically differentiates them as they relate to 'reality' on the one hand, and 'speculation on artificial systems' on the other (Bergson, 1959, p. 23). Abstract time here is constructed by modern science in its analysis of the evolution of closed systems. Speaking of physics' time *t1*, Bergson notes that 'les systèmes sur lesquels la science opère sont dans un présent instantané qui se renouvelle sans cesse, jamais dans la durée réelle, concrète, où le passé fait corps avec le présent' (Bergson, 1959, p. 23). Accordingly, abstract time for Bergson is time as it is measured, numbered, and this numbering occurs as we perform symbolic representation. To this 'stroboscopic' time of physics' closed systems, Bergson opposes the 'real', or concrete time of the interval between those two stroboscopic, instantaneous, moments; the real, concrete process of becoming irreducible to a difference between measuring numbers.

multiplicities, are indivisible organic wholes. They can't be 'added up' unless they are symbolically represented as spatial points. But *durée* is distinct from, even contrary to the symbolic representation of moments of time severed from one another in a space which is here conceived as homogenous and without quality, 'les moments de la *durée* interne ne sont pas extérieurs les uns aux autres' (Bergson, 1970, p. 100).²⁰² For the French philosopher, when we liken moments of *durée* to spatial points, and time to homogenous space, we lose the qualitative character of our inner experience, we 'bastardize' time,

Il est vrai que lorsqu'on fait du temps un milieu homogène où les états de conscience paraissent se dérouler, on se le donne par là même tout d'un coup, ce qui revient à dire qu'on le soustrait à la durée (...) Il y aurait donc lieu de se demander si le temps, conçu sous la forme d'un milieu homogène, ne serait pas un concept bâtard, dû à l'intrusion de l'idée d'espace dans le domaine de la conscience pure (Bergson, 1970, p. 47).²⁰³

The spatialization of time thus disconnects our experience from real *durée* by severing the unity of our temporal experience. As such, the organic unity of *durée* is broken apart. This is the context in which the self, then, becomes a mere shadow of itself, and it is this shadow-like, parasitical (Bergson, 1970, p. 75), spatialized and subdivided self, which 'lends itself better to social life in general' (Bergson, 1970, p. 59). We end up with an alienated self, profoundly divided between the 'true' concrete inner self, which is characterized by *durée* and qualitative multiplicities, and its social projection, which is formed by the spatial projection - and denaturation - of inner *durée* (Bergson, 1970, p. 102).

In Bergson, symbolic spatializations are operations of mental synthesis, and not processes actually occurring in the social world. Accordingly, Bergson's explanation for the spatialization of time reduces this phenomenon to a mere operation of the mind without identifying its real background in socio-historical processes of temporal alienation occurring in capitalist social time relations. But Bergson nonetheless expresses

²⁰² 'Inner moments of *durée* are not external to one another'. (free translation).

²⁰³ 'It is true that when we make time into a homogeneous milieu where states of consciousness appear as if they were unfolding, we represent this place all at once, which is equivalent to taking it away from *durée* (...) We could then ask if time, conceived of as a homogeneous milieu, is a bastardized concept, because of the intrusion of the idea of space in the domain of pure consciousness'. (free translation).

the fundamental alienation and reification of the self, implied in such a process in which the interaction with temporal social life itself dichotomizes the ego and works with its shadow. Social time, exteriorized time, here, alienates, separates the self into two distinct parts, inner and outer, and the outer part, through its contact with a spatialized social time, becomes but a phantom, a shadow, of the concrete self.

What makes me think that we can truly use the concept of alienation to describe Bergson's idea, is that what is lost, in this process of scission of the Ego, is human *freedom* itself. Indeed, human freedom, for Bergson, is essentially temporal, being rooted in *durée*. As such, for Bergson, the problem of freedom itself is a problem of temporality, in fact, the whole debate between determinism and free will, for the French philosopher, revolves around the question of the spatialization of *durée*, of the quantification of quality, 'toute discussion entre les déterministes et leurs adversaires implique une confusion préalable de la durée avec l'étendue, de la succession avec la simultanéité, de la qualité avec la quantité' (Bergson, 1970, p. 7).²⁰⁴ Alienation through abstraction and quantification of quality, here in Bergson's terms, is expressed as a *corruption* of our representations of time, change, movement *and freedom*,

Car si la confusion de la qualité avec la quantité se limitait à chacun des faits de conscience pris isolément, elle créerait des obscurités, comme nous venons de le voir, plutôt que des problèmes. Mais en envahissant la série de nos états psychologiques, en introduisant l'espace dans notre conception de la durée, elle corrompt, à leur source même, nos représentations du changement extérieur et du changement interne, du mouvement *et de la liberté*' (1970, p. 37, my emphasis).²⁰⁵

The whole discussion between determinists and their adversaries is thus misled:

puisque'il faut chercher la liberté dans une certaine nuance ou qualité de l'action même, et non dans un rapport de cet acte avec ce qu'il n'est pas ou avec ce qu'il aurait pu être. Toute l'obscurité vient de ce que les uns et les autres se représentent la délibération sous forme d'oscillation dans l'espace, alors qu'elle consiste en un progrès dynamique où le moi et les

²⁰⁴ 'every discussion between determinists and their adversaries implies a confusion of *durée* and extent, of succession and simultaneity, of quality and quantity'. (free translation).

²⁰⁵ 'If the confusion between quality and quantity was limited to each fact of consciousness isolated from one another, it would create obscurities, as we have seen, instead of problems. But by invading the series of our psychological states, it corrupts, at their very source, our representations of external and internal change, of movement, and of *freedom*'. (free translation).

motifs eux-mêmes sont dans un continuel devenir, comme de véritables êtres vivants' (Bergson, 1970, p. 81).²⁰⁶

Through this we can see that for Bergson, duration, the realm of temporal freedom, cannot be mapped by clock-time. Clock-time is thus fundamentally alien to *durée*, and thus to human freedom, which is the outward expression of the inner state of an indivisible self. By 'spatializing time', by reducing before and after to mere points in a homogenous succession, clock-time breaks apart *durée*, and severs its organic unity. As such, we could say that clock-time alienates personal time from the moment it measures it. The imposition of clock-time and World Standard Time, as well as phenomena such as scientific management, thus alienates the very personal time of duration, the temporal realm of human freedom, and creates beings which are attuned to the requirements of an – alienated – social order. In the French philosopher's words, beings in which the organic unity and multiplicity of moments and states is broken apart, 'will answer better the requirements of social life' (Bergson, quoted in Abbott, 2001, p. 218).

As such, in his powerful philosophical account of how human freedom is 'negated', or lost, in the identification of time with space, which occurs at the contact between our inner selves and the world, Bergson expresses in a profound and deeply moving way the temporal alienation which characterizes his own context (1970, p. 101). Capitalist abstract clock-time reduces the concrete times of human – and socio-natural – lives to interchangeable abstract time-units and as such alienates it. Even though Bergson locates these processes a-historically in a human propensity to 'measure', once one historicizes his conception of time, one finds it expressing fundamental characteristics of his socio-historical context of capitalist temporal alienation.

*

This enquiry into three of the most prominent philosophies of time has suggested that a context of capitalist temporal alienation tends to be mediated and expressed in

²⁰⁶ 'Since one must look for freedom in a certain nuance or quality of action, and not in a relation between this act with what it isn't or what it could have been. Obscurity here stems from the representation of deliberation as an oscillation in space, whereas it consists in a dynamic progress in which the self and the very motives are in a state of continuous becoming, just like true living beings'. (free translation).

cultural and philosophical enquiries about time. I have treated these philosophers as historical creatures. They each in their own way profoundly grasp a fundamental human condition under capitalist social time relations, namely temporal alienation. Even though they might ascribe different causes to it which might be valid or not from different philosophical perspectives, I have sought to historically contextualize these contributions.

A striking feature present in the last three conceptions of time is their relative forgetting of the human body as a socio-natural phenomenon. Indeed, they conceive of the concrete, authentic, 'true' time as more or less the experience of a transhistorical and universal consciousness, or a de-socialized 'caring' being.²⁰⁷ However, I have suggested that temporal alienation is not a transhistorical phenomenon, and needs to be historicized and put in social context. Furthermore temporal alienation does not only apply to 'minds', or consciousness, it is not merely an ideological phenomenon. It applies to socio-historical bodies and social life as processes defying the very distinction between mind and bodies, understood as a complex cluster of mind and matter, of social and natural origins. I have discussed how temporal alienation had effects on 'bodily' matters, especially in the examples of childbirth and scientific management, in chapter III. So although these three conceptions of time emphasize and express forms of temporal alienation as they relate mostly to a universal consciousness, it is important to keep in mind on the one hand that capitalist temporal alienation is historically specific, and on the other hand that it occurs in a realm which encompasses both social and natural aspects of the world, as well as 'material' and 'intellectual' components of human bodies.

²⁰⁷ In the case of Heidegger, one could argue that rooting authentic time in *Dasein's* resoluteness towards *death* does imply a notion of the body.

Conclusion. Alienated Time, Historical Materialism and Temporal Struggle.

The present study has thus followed a path which now comes to an end. I have sought to articulate a conception of capitalist social time relations as composed of abstract clock-time and human and socio-natural concrete times in tension, and I have suggested that the former tends to alienate, subsume and reduce the latter in contested processes of capitalist value formation. I have identified at the heart of such processes, among other things, the reproduction of a labour-market, and capitalism's drive to commodify more and more aspects of human and socio-natural life. The expression of 'commodified time', also used in the literature on social time, albeit unsatisfactorily, does apply, in part, to the notion of capitalist abstract time. However, as some have noted (Adam, 1995; Leccardi, 1996, among others), it does not do justice to the multiplicity of concrete times which tend to come under its sway in capitalist social time relations: I add to this that this expression, for all its merits, does not quite grasp the fundamental feature of capitalist abstract time which resides more precisely in its *alienation* and *reification*. As such, I suggest that 'alienated time' might very well be the shortest and most straightforward possible formulation to describe capitalist conceptions and practices of time, since it points to an *ongoing relationship in process* between *abstract* and *concrete* times in capitalist social time relations.

Theoretically, I have presented a conceptual apparatus in which time is conceived of as social time relations, as a process of *becoming* entailed in the relationship between socio-natural human bodies and socially mediated natural cycles and processes. This relationship, I have argued, is always-already historically specific, in the sense that it is always mediated by historically specific forms of social organization, specific forms of social-property relations and conflicts which entail specific and changing forms of institutionalized social power, different levels of development of productive forces, specific forms of social relations of power in terms of gender, race, class and sexuality, more or less integrated apparatuses of military or political domination, variously

integrated and functional religious institutions, different ideological forms, etc. As such, social time relations are also historically specific.

The arguments put forward in this study suggest that there are three 'moments' of temporal relationships in any social time relations: a moment made of socio-natural cycles and processes, a moment of human historically evolved socio-natural bodies, and a moment of social-property relations and conflicts, which all produce, comprise and display different times as well as entail their share of folded temporalities. However, these three 'moments' cannot be thought of as separate entities, which would come into contact as pre-constituted units. From a perspective which treats human social life as a whole in process, these three 'moments' co-constitute each other, i.e. human time, society's time and natural time are aspects of the same cluster of temporal relations. 1) The time of bodies is made up of social and biological cycles and processes. It comprises, channels and (re)produces processes and synchronizations with the time of nature, and it comprises, channels and (re)produces temporal relations, processes and synchronizations with the time of society. 2) The time of 'nature' is always-already funnelled, channelled, even altered, by bodies and societies through social practical activities, and by the fact that the times of human bodies and the times of social life are integrated within the times of natural ecosystems. 3) The time of society, for its part, is made up of the time of human bodies and human practical activities, by the overall cluster of social time relations, and is also shaped by natural cycles and processes of change.

These three apparently separate moments of time ('natural', 'social', and 'human'), of which I have highlighted the relationship to social property relations and conflicts, are thus all part of one and the same time, one and the same *process of becoming*, which, in the socially mediated and 'timed' interaction between human time and natural cycles and processes, displays social time relations whose fabric and texture are characterized by multiplicity *and temporal struggle*, and furthermore are always historically specific. Most of the scholarship on time has treated these three spheres as separate entities and these three times as separate times. However, my conception seeks to unify these times as inseparable aspects of a process of becoming. Importantly, this

'process of becoming' should not be seen as a metaphysical construction, somehow transcending social life. Rather, it is constantly made and remade by social practices considered as an empirical whole. This process of becoming is itself a *concrete* time made up of the totality of natural, social and human concrete cycles, processes and rhythms of interactions. It is the concrete time of history.

In this study, I have underlined the relationship between social-property relations and conflicts and social time relations, understood as a struggling entity. I have thus suggested that these 'threefold' social time relations are historically specific. Part of my argument has revolved around a comparative account between pre-capitalist social time relations in Western Europe and capitalist social time relations that were to emerge processually from changes in the social-property relations in the English countryside which would eventually spread to other social settings. I have identified at least four forms of social time which were part of pre-capitalist social time relations in the Western European context. Conceptions and practices of time of the Church and conceptions and practices of time of commercial merchants displayed a temporal form which I have called 'official time', which mixed and blended with forms of concrete temporalities notably in the urban acoustic landscape of 'bell time'. What I have termed processual concrete time, for its part, emerged from practices of social (re)production on the land. Whereas official time in this context strived to dominate and impose its conceptions and practices of time, it was irreducibly met by a form of concrete time which overwhelmingly permeated the bulk of social (re)productive practices.

The fact that processual concrete time maintains its relatively prominent and independent position in pre-capitalist social time relations in spite of its interaction with official time is related to a feature of pre-capitalist social-property relations which I have called its 'moment of appropriation'. In pre-capitalist societies, the moment of appropriation occurs after production. Although official time strives to dominate other times, domination through appropriation in pre-capitalist contexts is effectuated in the form of an appropriation occurring after production, it relies on the alienation of the product of labour, but not systematically of the 'time of labour'. In capitalist social time

relations, however, domination in the form of appropriation is effectuated simultaneously to the process of labour itself, it relies on the relationship between alienated labour and alienated time, on the fusion between human labour and abstract clock-time-units. As such, capitalist clock-time becomes dominant, hegemonic, in capitalist social time relations in a systematic way, a way in which 'official time' in pre-capitalist context was not.

I have furthermore enquired into the relationship between processes of value formation in capitalist societies and social time forms. There I found an inextricable relationship between abstract clock-time and capitalist value, around which I have built my conception of capitalist time as a struggle between abstract time and concrete times. I have suggested a way of reading social conflicts in capitalist settings as conflicts between abstract time and concrete times with class, gender and racial implications, and I provided examples of such readings. This understanding of the relationship between abstract time and other social times in capitalist social time relations has also allowed me to make sense of a number of the tensions and problems that emerge in the conceptions of time developed by modern philosophers such as Husserl, Bergson and Heidegger, while contrasting these contributions to ones made from non-capitalist contexts such as Aristotle's and Augustine's.

*

This reflection on time has not only led me to articulate a concept of time, but also leads me to articulate qualifications on the term 'historical materialism'. An error would be to separate the two terms, 'historical' here, referring to 'time', while materialism would refer to the socio-material world. Such an understanding risks the dichotomization between on the one hand a socio-material world that 'is', and on the other hand a 'history' which propels it forward. However, 'materialism' itself, I suggest, also needs to be understood *qua* becoming. Indeed the 'socio-material' world itself, at the very deep level of its constitution, is a process of becoming.

Versions of historical materialism have sometimes not paid enough attention to the way in which the socio-material world *is* not, but rather *becomes*. Variants such as

structural Marxism have aimed at identifying the theoretical relationship in a given social whole in a *synchronic* manner. This means that time is frozen up, like in a photograph, and social analysis' aim is then to analyze the relationship between parts and whole. This way of proceeding derives from an understanding of historical materialism in which the material world is conceived of as what *is*, and history as what brings about change from a configuration of social relations to the next. Each photograph is then replaced by another one, and time here appears as a series of stroboscopic moments. Ultimately, this ends up separating moments of social evolution from one another. However, the point I want to emphasize here is that these 'discrete' moments are *related* to each other, and that social analysis needs to account for the processes of change which occur 'between' each photographic slice of social evolution. Time must be conceived as a cluster of processes, not as a series of stroboscopic moments.

The way I conceive of historical materialism thus implies that the material world itself is in a constant process of becoming to start with, the word 'historical' in the expression then comes to refer to the human agency involved in the cluster of social time relations inscribed in the social fabric. As such, a *diachronic* analysis would gain in paying attention to clusters of social time relations which participate in, produce and reproduce, the process of becoming of the socio-material world. It would also gain from emphasizing how human activities shape and affect the process of becoming of the socio-material world.

In the same line of thought, methodologies in the field of the history of social and political thought might gain from considering the historical material world *qua* process of becoming in which the ideas and theories of great thinkers are situated. These concepts and theories are never completely separated from their socio-temporal context of formulation. If one takes seriously both the temporal nature of social life and the human agency of thinkers, historical analysis becomes the foremost tool of contextualization for any contribution to social and political thought.

This implies that history is not an abstract framework inside which occurs human action, it is rather constantly made and remade by human agency as it is deployed in

specific socio-historical settings. The very process of becoming of the socio-material world is, as such, not divorced from human action and human will. Humans make their own history to the extent that their own time-forms and temporal relations to themselves, nature and others, are engaged in social time relations which comprise temporal struggles participating in the production and reproduction of history. As such, reconfiguring social time relations is an integral part of what is meant by socio-historical *change*. The analysis of the passage from pre-capitalist social time relations to capitalist social time relations has shown the *processual* character of such a historical change. Reconfigurations of social relations occur in a *processual* way, they *become*, and an integral part of these reconfigurations of social relations, I suggest, is the reconfiguration of social time relations.

*

Although I have focused on capitalist abstract clock-time, I have tried to keep alive, throughout this study, notions of concrete times. I have highlighted the temporal aspect of dynamics of domination and resistance between capitalism's tendency to commodify – and thus *alienate* – time and the concrete times of human and socio-natural lives which resists it. Capitalism's drive to commodify and alienate time is relentless, and it is expressed in processes occurring all across the social field. Indeed, the drive to privatization of natural resources can be read as attempts by capital to abstract the concrete times of socio-natural cycles, and human interaction with them, in order to value them, i.e. to integrate these times in the logic of capital accumulation. In such processes of commodification, the complex cluster of useful labour, socio-natural cycles, human bodies and concrete temporal relationships become means to an end: capital accumulation. Privatizing water, for example, entails the abstraction from all the concrete socio-natural and human times involved in the relationship between humans and water into a set of quantifiable time-units expressed in value, thus attributing a – capitalist – value to water, not in the aim of satisfying human needs, but in the aim of profit making. Examples such as these with regards to the relationship between humans and a socially mediated nature, between humans and humans, and between humans and their own

bodies, illustrate a struggle between capitalism and human lives in which the temporal dimension deserves more attention from critical scholarship.

Reclaiming human concrete times of emotions, work, social relationships, human bodies, friendships, love, parenting, childhood, laughter, sleep, childbirth, childrearing, food production, art, the concrete time of our ecosystems, and so on, thus forms an integral part of the reclaiming of our lives and our world. The struggle for 'decommodification', to employ a somehow rebarbative term, also entails a struggle for the decommodification of human and socio-natural concrete times, the end of temporal alienation and of the subjection of human and social lives to the dictates of the capitalist market, capitalist abstract clock-time and capital accumulation. As such, temporal struggles figure prominently in what McNally has called 'value struggles' (2009, pp. 72-83) over the very forms in which social relations as well as social life are reproduced. These temporal struggles need more attention from critical scholarship. From this perspective, if we conceive of history as a concrete process of becoming, the reclaiming of the concrete times of human and socio-natural life might also amount to a reclaiming of history and historical time by those who make it.

Appendix A – A word on time in contemporary physics

Just as modern philosophy presents an ‘aporia’ between the ‘time of the world’ and the human lived experience of time, the debates in modern physics revolve around the clash between a conception of a tenseless world and a sense of ‘tenseness’ or ‘becoming’ closely related to the human experience of time. Both of these conceptions find evidence and support in theoretical physics as well as in experiments and data.

In a block-time conception, the *totality* of the space-time continuum is what is ‘real’. This means that there is no ontological distinction between past, present and future. Time is seen as a *block*, always-already there. When such a perspective is pushed to its logical limits, time’s passage is described as an ‘illusion’ (Barbour, 2000). Two main arguments support this ‘block-time’ conception. The first is the apparent implosion of any universal concept of simultaneity brought about by general relativity: the disappearance of a universal ‘now’. Indeed, as Einstein’s famous lightning thought experiment has shown (Einstein, 2010, pp. 18-19), simultaneity does not hold in the world of relativity. Simultaneity is relative. This stems from the fact that the ‘present moment’, the ‘now’, is dependent on the observer’s frame of reference. In specific situations, an event can appear to observers travelling at different speeds as past for an observer and future for another. The second argument stems from the fact that the equations of physics do not contain any representation of the ‘present moment’. This means that there is no particular significance in setting the time variable to $t = 0$. This goes hand on hand with the fact that basic physical laws (except for the second law of thermodynamics) do not entail an *arrow* of time. These laws are time-blind. Since the observation of physical processes displays an arrow of time, one would be tempted to look at the basic laws of physics in order to find time’s arrow. However, all the basic laws of fundamental processes are time symmetric, except for negligible exceptions. Time symmetry implies that a ‘lawful’ physical process can occur in both directions of time, i.e. there is nothing in the laws of physics that prevent a process from going either direction in time. There is no time arrow in the basic laws of physics. The time arrow in physics thus becomes a matter of convention.

Although block-time seems to make any idea of the unfolding of time meaningless, and treat time's passage either as an illusion, or as a subjective endowment of human beings, there are profound ways in which a conception of unfolding time is present in theoretical physics. At least three arguments can be isolated. First, as Dolev points out, Einstein's block-time has been reworked by Stein in order to include a 'moment of becoming' in its framework. Redefining the present as both 'now' and 'here' and reworking the Minkowskian space-time, Stein remodeled the famous light-cones for the past and future of an event. He has used the notion of 'becoming' to represent the tenses, and to reintroduce time's passage in Einstein's spacetime. Stein's present is spatially restricted, it is formed of the region spatially configured by the movement of light surrounding an event. Events can then be co-present, if they occur in the same region at the same time. An event occurring in a remote region of the universe that is over by the time light reaches another region is not co-present with anything that occurred in this second region during that timeframe. The interweaving of space and time is here most elegantly put to the fore. Here, a moment constitutes a 'present-space', determined by the speed of light. As the light-cones, i.e. the spatio-temporal regions of possible causal relationships, recedes and expands before and after the 'present-space', a sense of becoming, of time's passage, is reintroduced in the very model of block-time. Second, there is in fact a natural meaning of cosmic time which includes a 'universal now'. Such a cosmic time, a cosmic 'now', is defined by 'the frame of reference at rest with respect to the cosmic background radiation' (Polkinghorne, 2008, p. 280). The cosmic background radiation is the oldest radiation detected in the universe. It is believed to have been produced shortly after the big-bang, and was 'discovered' in the 1970s. This radiation provides a notion of 'rest' to cosmological physics, making it possible to measure the 'age' of stellar phenomena and entities. Such a notion is central to the overall discourse of theoretical and experimental physics, otherwise it would make no sense, for example, to claim that the universe is 13,7 billion years old, or that the Sun is 4,6 billion years old. Third, another argument, found in physics, for the unfolding-becoming conception of

time is the Second Law of thermodynamics, which states that entropy increases in isolated systems. This increasing is clearly underpinned by an arrow of becoming.

As Polkinghorne (2008) points out, then, both conceptions, block-time and becoming, seem to find back-up evidence and theoretical support in physics. Although block-time is generated by the implosion of simultaneity and the blindness of physics' laws to a direction of time, the latter three arguments do give meaning to the idea of time's unfolding. This debate, argues Polkinghorne, cannot help but become a metaphysical dispute. Science alone can't settle it, since both sides find evidence and theoretical support in physics.

Bibliography

- Abbott, Andrew (2001). *Time Matters: On Theory and Method*. Chicago : University of Chicago Press.
- Adam, Barbara (1995). *Timewatch. The Social Analysis of Time*. Cambridge : Polity Press.
- Adam, Barbara (1998). *Timescapes of Modernity: The Environment and Invisible Hazards*. London : Routledge.
- Adam, Barbara (2004). *Time*. Cambridge : Polity Press.
- Alfonso, Isabel (1991). Cistercians and Feudalism. *Past and Present*, (133), 3-30.
- Althusser, Louis (1965a). *Lire le Capital, Tome I*. Paris : Maspéro.
- Althusser, Louis (1965b). *Lire le Capital, Tome II*. Paris : Maspéro.
- Althusser, Louis (1974). *Montesquieu : la politique et l'histoire*. Paris : PUF.
- Althusser, Louis (1976). *Positions 1964-1975*. Paris : Éditions sociales.
- Althusser, Louis (2005). *Pour Marx*. Paris : La découverte.
- Anderson, Perry (1979). Lineages of the Absolutist State. London : Verso.
- Anderson, Perry (1980). Arguments within English Marxism. London : Verso.
- Anderson, Perry (1992). The Ends of History. In Perry Anderson, *A Zone of Engagement* (p.279-375). London/New York : Verso.
- Anderson, Perry (1996). *Passages from Antiquity to Feudalism*. London : Verso.
- Aristotle (1996). *Physics*. Oxford/New York : Oxford University Press.
- Augustine (1961). *Confessions*. London : Penguin books.
- Bakhtin, Mikhail (1984). *Rabelais and His World*. Bloomington : Indiana University Press.
- Barbour, Julian (2000). *The End of Time: The Next Revolution in Physics*. Oxford/New York : Oxford University Press.
- Bartky, Ian R. (1989). The Adoption of Standard Time. *Technology and Culture*, 30(1),

25-56.

- Beaud, Michel (2001). *A History of Capitalism, 1500-2000*. New York : Monthly Review Press.
- Benjamin, Walter (1999). *The Arcades Project*. Cambridge/London : Harvard University Press.
- Benjamin, Walter (2000a). *Oeuvres I*. Paris : Gallimard.
- Benjamin, Walter (2000b). *Oeuvres II*. Paris : Gallimard.
- Benjamin, Walter (2000c). *Oeuvres III*. Paris : Gallimard.
- Bergson, Henri (1959). *L'évolution créatrice*. Paris : PUF.
- Bergson, Henri (1965). *Matière et mémoire*. Paris : PUF.
- Bergson, Henri (1968). *Durée et simultanéité*. Paris : PUF.
- Bergson, Henri (1970). *Essai sur les données immédiates de la conscience*. Paris : PUF.
- Bloch, Marc (1989). *La société féodale*. Paris : Albin Michel.
- Birth, Kevin K. (1996). Trinidadian Times: Temporal Dependency and Temporal Flexibility on The Margins of Industrial Capitalism. *Anthropological Quarterly*, 69(2), 79-89.
- Boggs, Carl (1976). *Gramsci's Marxism*. London : Pluto Press.
- Bostock, David (1996). Introduction. In Aristotle. *Physics*. Oxford : Oxford University Press.
- Bourdieu, Pierre (1972). *Esquisse d'une théorie de la pratique, précédé de trois études d'ethnologie Kabyle*. Paris/Genève : Droz.
- Bourdieu, Pierre (1977). *Algérie 60, structures économiques et structures temporelles*. Paris : Minuit.
- Bourdieu, Pierre (1980). *Le sens pratique*. Paris : Minuit.
- Bourdieu, Pierre & Terry Eagleton (1994). Doxa and Common Life. In S. Zizek (ed). *Mapping Ideology*. London/New York : Verso.

- Brandon, S.G.F. (1965). *History, Time and Deity*. New York : Barnes and Noble.
- Braverman, Harry (1974). *Labor and Monopoly Capital*. New York : Monthly Review Press.
- Braudel, Fernand (1969). *Écrits sur l'histoire*. Paris : Flammarion.
- Braudel, Fernand (1979). *Civilisation matérielle, économie et capitalisme (XVe-XVIIIe siècles)*. 3 volumes. Paris : Armand Colin.
- Brenner, Robert (1985a). Agrarian Class Structure and Economic Development in Pre-Industrial Europe. In T.H. Alston & C.H.E. Philpin (ed). *The Brenner Debate*. Cambridge : Cambridge University Press.
- Brenner, Robert (1985b). The Agrarian Roots of European Capitalism. In T.H. Alston & C.H.E. Philpin. *The Brenner Debate*. Cambridge : Cambridge University Press.
- Brough, John Barnett (1991). Translator's Introduction. In Husserl, Edmund, *On the Phenomenology of the Consciousness of Internal Time*. Boston : Kluwer Academic Publishers.
- Brubaker, Sarah Jane & Heather Dillaway (2009). Medicalization, Natural Childbirth and Birthing Experiences. *Sociology Compass*, 3(1), January 2009, 31-48.
- Cahill, Heather A. (2001). Male Appropriation and Medicalization of Childbirth: an Historical Analysis. *Journal of Advanced Nursing*, 33(3), 334-342.
- Callinicos, Alex (1976). *Althusser's Marxism*. London : Pluto Press.
- Castree, Noel (2009). The Spatio-temporality of Capitalism. *Time and Society*, 18(1), 26-61.
- Charleton, Walter (1654/1966). *Physiologia Epicuro-Gassendo-Charltoniana: or a Fabrick of Science Natural Upon the Hypothesis of Atoms*. London : Tho. Newcomb. Reprinted with indices and introduction by Robert Hugh Kargon, New York/London : Johnson Reprint Corporation.
- Clarke, Simon (1982). *Marx, Marginalism and Modern Sociology*. London : Macmillan Press.
- Comninel, George (1987). *Rethinking the French Revolution, Marxism and the Revisionist Challenge*. London : Verso.
- Comninel, George (2000a). English Feudalism and the Origins of Capitalism. *Journal of*

- Peasant Studies*, 27(4), 1-53.
- Comninel, George (2000b). Marx's Context. *History of Political Thought*, 21(3), 467-483.
- Comninel, George (2012). Feudalism. In Fine, Ben and Alfredo Saad-Filho (eds). *The Elgar Companion to Marxist Economics* (p.131-137). Cheltenham : Edward Elgar Publishing.
- Connes, Alain (2008). On the Fine Structure of Spacetime. In Majid, Shahn (ed). *On Space and Time* (p.196-237). Cambridge : Cambridge University Press.
- Conrad, Peter (1992). Medicalization and Social Control. *Annual Review of Sociology*, 18, 209-232.
- Conrad, Peter (2007). *The Medicalization of Society*. Baltimore : John Hopkins University Press.
- Coope, Ursula (2005). *Time for Aristotle*. Oxford : Oxford University Press.
- DiSalle, Robert (2006). *Understanding Space-Time. The Philosophical Development of Physics from Newton to Einstein*. Cambridge : Cambridge University Press.
- Dohrn-van Rossum, Gerhard (1996). *History of the Hour: Clocks and Modern Temporal Orders*. Chicago : Chicago University Press.
- Dolev, Yuval (2007). *Time and Realism, Metaphysical and Antimetaphysical Perspectives*. Cambridge/London : MIT Press.
- Donaldson, Mike (1996). The End of Time? Aboriginal Temporality and the British Invasion of Australia. *Time and Society*, 5(2), 187-207.
- Dufour, F.G. (2004). Historical Sociology and the Concept of Social-property relations. *Cahiers d'épistémologie*, (315), ISBN: 2-89449-115-8
- Dufour, F.G. & Sébastien Rioux (2008). La sociologie historique, de la théorie des relations sociales de propriété. *Actuel Marx*, (43), 126-139.
- Dufour, F.G. (2008). Débats sur la transition au capitalisme: une défense des approches qualitatives. *Cahiers de recherches sociographiques*, (45), 73-91.
- Dufour, F.G. (2010a). Proprietas et Dominium au cœur de la réorganisation des relations d'appropriation féodales: le débat entre Guillaume d'Ockham et Jean XXII. *Société*, (29).

- Dufour, F.G. (2010b). The Significance and Ambiguities of Bourdieusian Sociology: Locating Bourdieu's *The Social Structures of the Economy* in Theory and Practice. *Historical Materialism*, 18(1), 178-192.
- Durkheim, Émile (1968). *Les formes élémentaires de la vie religieuse*. Paris : PUF.
- Eagleton, Terry (1991). *Ideology*. London/New York : Verso.
- Eagleton, Terry (1994). Ideology and its Vicissitudes. In Slavoj Zizek (ed), *Mapping Ideology*. London/New York : Verso.
- Einstein, Albert (2010). *Relativity, The Special and General Theory*. Laverne Tennessee : BN Publishing.
- Einstein, Albert & Leopold Infeld (1966). *The Evolution of Physics*. New York : Simon and Schuster.
- Elias, Norbert (1992). *Time: an Essay*. Oxford/Cambridge : Blackwell.
- Engels, Friedrich (1988). Outlines of a Critique of Political Economy. In Karl Marx, *Economic and Philosophic Manuscripts of 1844* (p.171-202). New York : Prometheus books.
- Falk, Dan (2008). *In Search of Time*. Toronto : McClelland and Stewart Ltd.
- Fine, Ben & Alfredo Saad-Filho (2004). *Marx's Capital*. London : Pluto Press.
- Fox, Bonnie and Diana Worts (1999). Revisiting the Critique of Medicalized Childbirth. *Gender and Society*, 13(3), 326-346.
- Fraser, J.T. (1999). *Time, Conflict and Human Values*. Chicago : University of Illinois Press.
- Friese, Heidrun (2010). Times, Histories and Discourse. *Rethinking History: The Journal of Theory and Practice*, 14(3), 405-420.
- Giddens, Anthony (1979). *Central Problems in Social Theory. Action, Structure and Contradiction in Social Analysis*. London : Macmillan.
- Giddens, Anthony (1981). *A Contemporary Critique of Historical Materialism*. Berkeley/Los Angeles : University of California Press.
- Giddens, Anthony (1984). *The Constitution of Society. Outline of the Theory of*

- Structuration*. Cambridge : Polity Press.
- Glennie, Paul & Nigel Thrift (1996). Reworking E.P. Thompson's 'Time, Work-discipline and Industrial Capitalism'. *Time and Society*, 5(3), 275-299.
- Glennie, Paul & Nigel Thrift (2009). *Shaping the Day, A History of Timekeeping in England and Wales 1300-1800*. Oxford : Oxford University Press.
- Glucksmann, Miriam (1974). *Structuralist Analysis in Contemporary Social Thought*. London/Boston : Routledge and Kegan Paul Ltd.
- Goody, Jack (2006). *The Theft of History*. Cambridge : Cambridge University Press.
- Gramsci, Antonio (1971). *Selections from the Prison Notebooks*. Quintin Hoare and Geoffrey Nowell Smith (eds), New York : International Publishers.
- Gupta, Akhil (1992). The Reincarnation of Souls and the Rebirth of Commodities: Representations of Time in 'East' and 'West'. *Cultural Critique*, (22), 187-211.
- Harvey, David (1990). Between Space and Time: Reflections on the Geographical Imagination. *Annals of the Association of American Geographers*, 80(3), 418-434.
- Harvey, David (2006). *The Limits to Capital*. London/New York : Verso.
- Hassan, Robert (2009). *Empires of Speed: Time and the Acceleration of Politics and Society*. Leiden/Boston : Brill.
- Heidegger, Martin (1962). *Being and Time*. Oxford : Blackwell.
- Heidegger, Martin (1986). *Être et temps*. Paris : Gallimard.
- Heidegger, Martin (1988). *The Basic Problem of Phenomenology*. Bloomington : Indiana University Press.
- Heller, Michael (2008). Where Physics Meets Metaphysics. In Majid, Shahn (ed), *On Space and Time*. Cambridge : Cambridge University Press.
- Hessen, Boris (2009). The Social and Economic Roots of Newton's Principia. In Gideon Freudenthal & Peter McLaughlin. *The Social and Economic Roots of the Scientific Revolution* (p. 41-101). Boston : Springer. Also available at http://webfiles.mpiwg-berlin.mpg.de/rereadingClassics/Hessen.pdf/V1_Hessen.pdf (retrieved on 2011-04-27).

- Hilferding, Rudolf (1981). *Finance Capital*. London : Routledge.
- Hilton, Rodney (1985a). A Crisis of Feudalism. In T.H. Alston & C.H.E. Philpin, *The Brenner Debate*. Cambridge : Cambridge University Press.
- Hilton, Rodney (1985b). Medieval Market Towns and Simple Commodity Production. *Past and Present*, (109), 3-23.
- Husserl, Edmund (1962). *Ideas, General Introduction to Pure Phenomenology*. New York : Collier Books.
- Husserl Edmund (1970). *The Crisis of European Sciences and Transcendental Phenomenology*. Evanston : Northwestern University Press.
- Husserl, Edmund (1991). *On the Phenomenology of the Consciousness of Internal Time*. Boston : Kluwer Academic Publishers.
- Kant, Immanuel (1944). *Critique de la raison pure*. Paris : PUF.
- Kennedy, Geoff (2008). *Diggers, Levellers and Agrarian Capitalism, Radical Political Thought in 17th Century England*. Lanham : Lexington books.
- Kern, Stephen (1983). *The Culture of Time and Space, 1880-1918*. Cambridge/London : Harvard University Press.
- Kohout Lawrence, Rachel V. (2008). Foreword. In Ludwig Feuerbach, *The Essence of Christianity*, Walnut : MSAC Philosophy Group.
- Kuhn, Thomas S. (1996). *The Structure of Scientific Revolutions*. 3rd edition, Chicago: University of Chicago Press.
- Lacan, Jacques (1966). *Écrits I*. Paris : Seuil.
- Lacan, Jacques (1971). *Écrits II*. Paris : Seuil.
- Lacan, Jacques (1972). *Le Séminaire livre I, Les écrits techniques de Freud*. Paris : Seuil.
- Lacan, Jacques (2007). *The Seminar of Jacques Lacan Book XVII; The Other Side of Psychoanalysis*. New York : Norton.
- Lachmann, Richard (1987). *From Manor to Market, Structural Change in England, 1536-1640*. Madison : University of Wisconsin Press.
- Landes, David (1983). *Revolution in Time: Clocks and the Making of the Modern World*.

Cambridge : Harvard University Press.

Lapointe, Thierry & Frédérick-Guillaume Dufour (2011). Assessing the Historical Turn in IR, An Anatomy of Second-Wave Historical Sociology. *Cambridge Review of International Affairs*, DOI :10.1080/09557571.2011.558493.

Lebowitz, Michael (2003). *Beyond Capital, Marx's Political Economy of the Working Class*. London : Palgrave Macmillan.

Leccardi, Carmen (1996). Rethinking Social Time: Feminist Perspectives. *Time and Society*, 5(2), 169-186.

Le Goff, Jacques (1977). *Pour un autre Moyen-âge, temps, travail et culture au Moyen-âge*. Paris : Gallimard.

Lie, Orlanda S.H. (2004). The Concept of Time in the Medieval World View. In Thomas F. Shannon & Johan P. Snappe (eds). *Janus at the Millenium* (p.201-209). Lanham, MD : University Press of America.

Luhmann, Niklas, (1976). The Future Cannot Begin: Temporal Structures in Modern Society. *Social Research*, (43), 130-52.

Lukács, Georg (1971). *History and Class Consciousness. Studies in Marxist Dialectics*. Cambridge : MIT Press.

Majid, Shahn (2008). Quantum Spacetime and Physical Reality. In Majid, Shahn (ed), *On Space and Time* (p.56-140). Cambridge : Cambridge University Press.

Martineau, Jonathan (ed) (forthcoming in 2012). *Figures contemporaines de la théorie sociale anglo-américaine*. Montréal : Lux.

Martineau, Jonathan (2012), 'Introduction', in Martineau (ed), *Figures contemporaines de la théorie sociale anglo-américaine*. Montréal : Lux.

Marx, Karl (1976). *Capital*. London : Penguin books.

Marx, Karl (1978). *Capital Volume II*. London : Penguin books.

Marx, Karl (1981). *Capital Volume III*. London : Penguin books.

Marx, Karl (1988). *Economic and Philosophic Manuscripts of 1844*. Amherst : Prometheus books.

Marx, Karl & Friedrich Engels (1998). *The German Ideology*. Amherst : Prometheus

books.

McNally, David (1988). *Political Economy and The Rise of Capitalism: A Reinterpretation*. Berkeley/Los Angeles/London : University of California Press.

McNally, David (1993). *Against the Market: Political Economy, Market Socialism and the Marxist Critique*. London/New York : Verso.

McNally, David (2000). Political Economy to the Fore: Burke, Malthus and the Whig Response to Popular Radicalism in the Era of the French Revolution. *History of Political Thought*, 21(3), 427-47.

McNally, David (2001). *Bodies of Meaning, Studies in Labor, Language and Liberation*. Albany : State University of New York Press.

McNally, David (2004a). Language, Praxis and Dialectics: Reply to Collins. *Historical Materialism*, 12(2), 149-167.

McNally, David (2004b). The Dual Form of Labour in Capitalist Society and the Struggle over Meaning: Comments on Postone. *Historical Materialism*, 12(3), 189-208.

McNally, David (2009). From Financial Crisis to World-Slump: Accumulation, Financialisation and the Global Slowdown. *Historical Materialism*, 17(2), 35-83.

Mead, George H. (1934). *Mind, Self, and Society*. Chicago : University of Chicago Press.

Mészáros, István (2010). *Social Structure and Forms of Consciousness. Vol I: The Social Determination of Method*. New York : Monthly Review Press.

Mumford, Lewis (1967). *Technics and Civilisation*. London : Routledge & Kagan Phillip.

Needham, Joseph (1981). *Science in Traditional China, A Comparative Perspective*. Cambridge : Harvard University Press.

Newton, Isaac (1995). *The Principia*. Amherst : Prometheus Books.

Newton, Isaac (2003). *Opticks*. Amherst : Prometheus Books.

Newton, Isaac (2010). *The Principia, The Mathematical Principles of Natural Philosophy*. Laverne Tennessee : Snowball publishing.

Nguyen, Dan Thu (1992). The Spatialisation of Metric Time. The Conquest of Land and Labour in Europe and the United States. *Time and Society*, 1(1), 29-50.

- Nishimoto, Ikuko (1997). The 'Civilisation' of Time, Japan and the Adoption of the Western Time System. *Time and Society*, 6(2), 237-259.
- Ollman, Bertell (1976). *Alienation. Marx's Conception of Man in Capitalist Society*. Cambridge : Cambridge University Press.
- Ollman, Bertell (2003). *Dance of the Dialectic. Steps in Marx's Method*. Urbana: University of Illinois Press.
- Osborne, Peter (1994). The Politics of Time. *Radical Philosophy*, (68), 3-9.
- Osborne, Peter (1996). *The Politics of Time*. New York : Verso.
- Osborne, Peter (2008). Marx and the Philosophy of Time. *Radical Philosophy*, (147), 15-22.
- Penn, Simon A.C. & Christopher Dyer (1990). Wages and Earnings in Late Medieval England: Evidence from the Enforcement of the Labour Laws. *Economic History Review, New Series*, 43(3), 356-376.
- Penrose, Roger (2004). *The Road to Reality*. London : Jonathan Cape.
- Penrose, Roger (2008). Causality, Quantum Theory and Cosmology. In Majid, Shahn (ed), *On Space and Time* (p.141-195). Cambridge : Cambridge University Press.
- Polkinghorne, John (2008). The Nature of Time. In Majid, Shahn (ed), *On Space and Time* (p.278-283). Cambridge : Cambridge University Press.
- Postan, Michael (1975). *The Medieval Economy and Society*. London : Penguin books.
- Postone, Moishe (1993). *Time, Labor and Social Domination*. Cambridge/NewYork : Cambridge University Press.
- Putnam, Hilary (1975). *Mathematics, Matter and Method*. Cambridge : Cambridge University Press.
- Quinones, Ricardo J. (1972). *The Renaissance Discovery of Time*. Cambridge : Harvard University Press.
- Renouard, Yves (2009). *Les hommes d'affaires italiens du Moyen Âge*. Paris : Tallandier.
- Ricoeur, Paul (1983). *Temps et récit I*. Paris : Seuil.
- Ricoeur, Paul (1984). *Temps et récit II*. Paris : Seuil.

- Ricoeur, Paul (1985). *Temps et récit III*. Paris : Seuil.
- Rifkin, Jeremy (1987). *Time Wars. The Primary Conflict in Human History*. New York : Simon and Schuster.
- Rosenberg, Justin (2000). *The Follies of Globalisation Theory*. London : Verso.
- Rosenberg, Justin (2006). Why is there no international historical sociology? *European Journal of International Relations*, 12, 307-340.
- Rousseau, Jean-Jacques (1963). *Du Contrat Social*. Paris : Union Générale des Éditions.
- Rynasiewicz, Robert (1995). By Their Properties, Causes and Effects: Newton's Scholium on Time, Space, Place and Motion. *Studies in History and Philosophy of Science*. (26), 133-321.
- Schütz, Alfred (1971). *The Problem of Social Reality*. The Hague: Martinus Nijhoff.
- Serres, Michel & Bruno Latour (1995). *Conversations on Science, Culture and Time*. Ann Arbor : University of Michigan Press.
- Sewell, William H. Jr (2008). The Temporalities of Capitalism. *Socio-Economic Review*, (6), 517-537.
- Smith, Thomas C. (1986). Peasant Time and Factory Time in Japan. *Past and Present*, (111), 165-197.
- Sorokin, Pitirim (1964). *Sociocultural Causality, Space, Time*. New York : Russell & Russell.
- Strauss, Leo & Joseph Cropsey (eds) (1987). *History of Political Philosophy*. Chicago : University of Chicago Press.
- Strauss, Leo (1988). *What is Political Philosophy? and Other Studies*. Chicago/London : University of Chicago Press.
- Strauss, Leo (1989). *The Rebirth of Classical Political Rationalism*. Chicago/London : University of Chicago Press.
- Teschke, Benno (2003). *The Myth of 1648*. London : Verso.
- Thomas, Keith (1964). Work and Leisure. *Past and Present*, (29), 50-66.

- Thompson, E.P. (1993). Time, Work-discipline and Industrial Capitalism. In E.P. Thompson. *Customs in Common* (p.352-403). New York : New Press.
- Thompson, E.P. (1995). *The Poverty of Theory*. London : Merlin.
- Waterlow, Sarah (1984). Aristotle's Now. *The Philosophical Quarterly*, 34(135), 104-128.
- Weatherill, Lorna (1988). *Consumer Behaviour and Material Culture in Britain 1660-1760*. London : Routledge.
- Weber, Max (1964). *L'éthique protestante et l'esprit du capitalisme*. Paris : Plon.
- Williams, Raymond (1977). *Marxism and Literature*. Oxford : Oxford University Press.
- Wood, Ellen Meiksins (1995). *Democracy Against Capitalism*. Cambridge : Cambridge University Press.
- Wood, Ellen Meiksins (2005). *Empire of Capital*. London/New York : Verso.
- Wood, Ellen Meiksins (2008). *Citizens to Lord*. London/New York : Verso.
- Wood, Ellen Meiksins (2012). *Liberty and Property*, London/New York: Verso.
- Wood, Neal (1978). The Social History of Political Theory. *Political Theory*, 6(3), 345-367.
- Wood, Neal (1984). *John Locke and Agrarian Capitalism*. Berkeley/Los Angeles/London : University of California Press.
- Wood, Neal (1988). *Cicero's Social and Political Thought*. Berkeley : University of California Press.
- Wood, Neal (2002). *Reflections on Political Theory, A Voice of Reason from the Past*. Houndmills/Basingstoke Hampshire/New York : Palgrave.
- Wood, Neal and Ellen Meiksins Wood (1978). *Class Ideology and Ancient Political Theory*. New York : Oxford University Press.
- Zerubavel, Eviatar (1981). *Hidden Rhythms: Schedules and Calendars in Social Life*. Chicago : The University of Chicago Press.
- Zerubavel, Eviatar (1982). The Standardization of Time, A Sociohistorical Perspective. *American Journal of Sociology*, 88(1), 1-23.

Zerubavel, Eviatar (1985). *The Seven Day Circle: the History and Meaning of the Week*. Chicago : University of Chicago Press.

Zizek, Slavoj (1994). The Spectre of Ideology. In S. Zizek (ed). *Mapping Ideology*. New York/London : Verso.

Zmolek, Mike (2000). The Case for Agrarian Capitalism, A Response to Albritton. *Journal of Peasant Studies*, 27(4), 138-159.