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The Spatio-Temporal Structures of Society:
Modernity and Ecological Modernization as Restructurations
of Time and Space

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The Spatio-Temporal Structures of Society:

Modernity and Ecological Modernization as Restructurations of Time
and Space

by

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Thesis

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Approaches in the social sciences have experienced a shift toward the themes of time and space, at least over the past three decades. This shift was clearly announced in the invitation made by Anthony Giddens in the early 1980s to retreat from the considerations of time and space as simple containers of social action. Furthermore, several other authors have pointed out at least three shortfalls of the status quo before 1980s: i) the lack of the temporal dimension in the sociological explanation of modernity, ii) the dismissal of the spatial particularity in the accounts of social change, and iii) the need to temporalize the geographical inquiries.

How are social sciences accounts and social actions affected by transformation to the spatio-temporal structures of society? That is the general inquiry that inspired this thesis. The notion of spatio-temporal restructuration is introduced to capture the processes of restructuration that are taking place in the social sciences and in social life. Consequently, the study of the spatio-temporal structures of society includes epistemological and phenomenological research. A reorganization of social science spatio-temporal explanatory frameworks is proposed through epistemological research. A phenomenological investigation refers to the dialogical relationship between spatio-temporal arrangements and regimes, which together define the spatio-temporal structures of society. These two conditions of the research in spatio-temporal restructuration –epistemological and phenomenological- explain the twofold structure of the thesis.

Part 1, which focuses on theory, highlights phenomena as well as theoretical accounts that sustain the notion of spatio-temporal restructuration. The section explores the contribution and limits of the notion as a means of theorizing the macro and micro level of the restructuration process. Before engaging in this task, a revision of the growing sociological concerns in the categories of time and space is proposed. Additionally, the ideas of objective time and space are critically discussed, as are the claims of de-territorialization and de-temporalization. Macro-level restructuration is reconstructed as the emergence of enlarged and decentered narratives, first in the

historical account, and then in the political economic domain. Micro-level restructuration is presented as occurring on the horizon –surface- of everyday life experience, but with a particular emphasis on action-oriented geography.

As a case study, Part 2 addresses the modernization of the environmental institution in Chile between 1994 and 2010 and uses narrative analysis and critical discourse analysis as methodologies. The aim is to uncover how the institutional representation of nature and the emerging socio-ecological conflict are both outcomes of a pervasive spatio-temporal restructuration. First, a description of ecological modernization in the Chilean context is offered. Second, the re-emergence of socio-ecological conflict is represented as a struggle between spatio-temporal frameworks for interpretation and action by different social groups. And finally, a profound analysis of spatio-temporal re-structuration as a result of novel environmental national law is carried out and discussed.

Spatio-temporal restructuration in these terms becomes not only a platform from which to observe society: It also represents an analytical tool for approaching research in the paradigms of social sciences and social conflict. On the basis of the spatio-temporal restructuration perspective further research would be required in equal measure y in both fields.

Die räumlich-zeitlichen Strukturen der Gesellschaft: Moderne und ökologische Modernität als Restrukturierung von Zeit und Raum

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Zusammenfassung: Die Ansätze in den Sozialwissenschaften haben zumindest in den letzten drei Jahrzehnten eine Verlagerung hin zu den Themen Zeit und Raum erfahren. Diese Verschiebung wurde bereits in den frühen 1980er Jahren deutlich angekündigt durch die Aufforderung Anthony Giddens, sich von der Betrachtung von Zeit und Raum als einfache Aufbewahrungsorte gesellschaftlichen Handelns zurückzuziehen. Darüber hinaus haben mehrere andere Autoren auf mindestens drei Defizite des Status Quo vor den 1980er Jahren hingewiesen: I) das Fehlen der zeitlichen Dimension in den soziologischen Erläuterungen der Moderne, II) das Ausklammern der räumlichen Besonderheit in der Darstellung des gesellschaftlichen Wandels und III) die Notwendigkeit, geographische Untersuchungen zu verzeitlichen.

Wie sind sozialwissenschaftliche Vorgänge und soziales Handeln beeinflusst durch die Veränderung der räumlich-zeitlichen Strukturen der Gesellschaft? Das ist die allgemeine Untersuchung, welche diese Doktorarbeit anregte. Die Vorstellung der raumzeitlichen Restrukturierung wird eingeführt, um die Prozesse der Umstrukturierung zu erfassen, die in den Sozialwissenschaften und im gesellschaftlichen Leben stattfinden. Demzufolge schließt eine Studie der räumlich-zeitlichen Strukturen der Gesellschaft auch erkenntnistheoretische und phänomenologische Forschung mit ein. Eine Neugestaltung des raumzeitlichen erklärenden Rahmens in den Sozialwissenschaften wird durch erkenntnistheoretische Forschung vorgeschlagen. Eine phänomenologische Untersuchung bezieht sich auf die dialogische Beziehung zwischen räumlich-zeitlichen Vereinbarungen und Ordnungen, die zusammen die räumlich-zeitlichen Strukturen der Gesellschaft definieren. Diese beiden Bedingungen der Forschung in räumlich-zeitlicher Umstrukturierung – erkenntnistheoretisch und phänomenologisch – erklären die doppelte Struktur der vorliegenden Doktorarbeit.

Teil 1 konzentriert sich auf die Theorie und beleuchtet dabei Vorgänge ebenso wie theoretische Darstellungen, die den Begriff der räumlich-zeitlichen Restrukturierung enthalten. Dieser Abschnitt untersucht die Mitwirkung und die Grenzen des Begriffs als Mittel der Theoretisierung von Makro- und Mikroebene des Restrukturierungsprozesses. Bevor näher auf diese Aufgabe eingegangen werden soll, wird eine Überprüfung des wachsenden soziologischen Interesses der Kategorien Raum und Zeit vorgeschlagen. Darüber hinaus werden die Ideen der objektiven Zeit und des objektiven Raums kritisch diskutiert, wie die Forderungen nach Entterritorialisierung und Entschleunigung. Die Umstrukturierung der Makroebene wird als Entstehung der erweiterten und dezentrierten Darstellungen rekonstruiert, zunächst in der historischen Bedeutung und später im politisch-wirtschaftlichen Bereich. Die Umstrukturierung der Mikroebene wird als Auftreten anhand der Erfahrungen des täglichen Lebens, aber mit einem besonderen Schwerpunkt auf der handlungsorientierten Geographie vorgestellt.

Als Fallstudie befasst sich Teil 2 mit der Modernisierung der Institution Umwelt in Chile zwischen 1994 und 2010 und verwendet dabei narrative Analyse und kritische Diskursanalyse als Methoden. Das Ziel ist es aufzudecken, wie sowohl die institutionelle Vertretung der Natur als auch der aufstrebende sozialökologische Konflikt beide Resultate einer durchdringenden raumzeitlichen Umstrukturierung sind. Zunächst gibt es eine Beschreibung der ökologischen Modernisierung im chilenischen Raum. Daran anschließend wird die Wiederentstehung des sozial-ökologischen Konflikts aufgezeigt als Kampf zwischen räumlich-zeitlichen Rahmenbedingungen für Deuten und Handeln von verschiedenen sozialen Gruppen. Und schließlich wird eine tiefgehende Analyse der raumzeitlichen Umstrukturierung als Ergebnis neuer nationaler Umweltgesetze durchgeführt und besprochen.

Die räumliche-zeitliche Restrukturierung wird unter diesen Bedingungen nicht nur zu einer Bühne, um die Gesellschaft zu beobachten: Es stellt auch ein analytisches Werkzeug dar, um die Forschung an die sozialwissenschaftlichen Paradigmen und sozialen Konflikte anzunähern. Auf der Grundlage raumzeitlicher Restrukturierung wäre die Perspektive weiterer Forschung in gleichem Maße und in beiden Fächern erforderlich.

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THESIS PART ONE: THEORETICAL RESEARCH.
MODERNITY AS SPATIO-TEMPORAL RESTRUCTURATION IN
SOCIAL SCIENCES EXPLANATION AND EVERYDAY LIFE

Introduction

This thesis begins with the idea that behind any social formation and sociological account lays an underlying spatio-temporal structure. That is to say the research is premised on the conviction that time and space together play a major role in social life and therefore also in so the explanations of the social sciences.

At the outset of this dissertation, the intention was to offer a theoretical description of modernity as a transformation of spatio-temporal structures. Some of the changes in time and space that modernity entails are not merely shifts in the types of places that people experience. On the contrary, they are transformations in the very spatio-temporal structures that organize social life. The notion of non-places, empty places, and spaces of flows are all very clear examples of the transformation taking place in the modern organization of time and space. However, these are not adequate notions for an interpretation of modernity, *per se*, as a novel spatio-temporal structure. If this is the case, and modernity is not only the emergence of novel types of places, then spatio-temporal structures are organized at a different level, and historically, these structures have undergone a process of collapse, transformation, and maintenance. In short, spatio-temporal structures are at the core of social life, and they are clearly components of social science explanations.

When this research was started in 2010, discourses about de-territorialization, the diminishing role of time and space in social science, and the simple notion of time and space as given facts were all still very present in interdisciplinary circles. This with the exception of human geography, anthropology, and regional study, the latter also known as area studies. Much of the human and social sciences, at that time, seemed to be very comfortable taking time and space for granted in theory and considered it only as a container for social action in empirical research.

To some extent the line of argument pursued in this thesis may be seen as an effort to consolidate a spatio-temporal turn in sociology, and more recently in environmental sociology. Of course, this perspective has much in common with the cultural turn in geography, or what can be called the geographical turn in history, as originally

proposed by Fernand Braudel. At the same time, the sociological and anthropological descriptions of new places in late modernity, supermodernity, and liquid modernity are all contributing to the relevance of time and space structures in social life. Nevertheless, they fall short in delivering an explanation of the processes and mechanisms that set up the spatio-temporal structures of modernity.

It is important to shine a light on the spatio-temporal structures of social life and of social explanation. However, this task requires a different analytical perspective than those presented thus far. First, it is necessary to revise theories that describe modernity as a transformation in time and/or space regimes. Second, continuing the revision of analytical perspectives that explicitly address the reorganization of time and space, it is indispensable to formulate the research topic in terms of spatio-temporal restructuration in wide spatialities and long temporalities. Finally, it is essential to consider the phenomenological approaches that contribute in an every day bases to the forming of territorialities and temporalities. All these theoretical endeavors involve the following question: What is implied by a consideration of modernity as a spatio-temporal restructuration?

As I point out in the first part of the thesis, which is devoted to theory, spatio-temporal restructuration runs on two parallel tracks in different forms: as transformation in the explanatory devices of the social sciences, and as change in the spatio-temporal frameworks of everyday life. This broader notion of the research question, which embraces the levels of epistemology and everyday life, contains another inquiry: How can a transformation in social institutions, action, and representation provoke forms of spatio-temporal restructuration?

The logic of spatio-temporal restructuration has been approached theoretically as well as empirically in this thesis. The theoretical part of the argument focuses on the social constitution of spatio-temporal frameworks. Little attention has been paid here to describing how this framework influences social praxis and has privileged the makeup of spatio-temporal structures as the object of sociological research. The empirical part the thesis describes ecological modernization as a process of spatio-temporal restructuration. The spatio-temporal structures that emerge as a consequence of transformation in environmental legal framework are described by means of critical

discourse and narrative analysis methods. In the same manner as the empirical analysis, social action is considered through the prism of social speech and not via direct observation.

Spatio-temporal restructuration is conceptualized as transformation in the spatial and temporal frameworks with which society interprets and acts in the world. The notion of world is defined here in negative terms as what it is not. This notion of "world" is not the others (society), nor is it the immediate self (the individual), but it is a strong tie that binds structure and agency together. Spatio-temporal restructuration is operationalized as a transformation in the prevailing spatial and temporal discursive orientations, as well as in the discursive mechanisms and dispositives that enact prevalent spatio-temporalities to coordinate social action over nature.

Chapter 1 introduces the very abstract concern of spatio-temporal restructuration from my personal experience and analyzes a set of theories for their ability to shed light on the spatio-temporal restructuration process by rejecting the idea of an overall and abstract articulation of time and space. Chapter 2 proposes the general and specific research object, and chapters 3, 4 and 5 construct a theoretical approach to spatio-temporal restructuration.

The first sociological account regarding the significant role of time and space in society is described in Chapter 3. The work of Marcel Mauss serves as the theoretical foundation of the restructuration logic of time and space. He proposed that time and space are a priori conditions inside a cultural universe but mutable within different universes. The work of Norbert Elias and Neil Smith is useful to distance us from the notion of objective time and space, while references to the work of Rogério Haesbaert and Yi-Fu Tuan are used to confront the de-territorialized and de-temporalized social explanation. The main function of this section is to reveal the pervasive restructuration of time and space hidden under narratives that claim their objective condition or irrelevance to the social explanation.

Chapter 4 seeks to understand spatio-temporal restructuration from the macro-level, and Chapter 5 does the same but from the micro-level. The major contribution of these chapters is their emphasis on multiple characters and the unstable state of

spatio-temporal structures. The theoretical proposal introduced here, more explicitly than previously, is the notion of regimes and arrangements; the intention is to describe the heterogeneous character of spatio-temporal structures. Spatio-temporal regimes provide a more stable orientation for social action, and therefore their scope is wider and longer than that of an arrangement. Nevertheless, both interact in the consolidation of modern spatio-temporal structures. This work will refer to such a perspective on time and space not as postmodern but as a multiple structuration of time and space in modernity, thereby approaching the notion of multiple modernities. Contemporary modernity, in the Western world in particular but also beyond, is without a doubt a moment in which tendencies toward synchronization/desynchronization and fragmentation/integration are prevalent with regard to the general trends of spatial or temporal organization.

The theoretical approach is concerned primarily with spatio-temporal restructuration in explanations of the social sciences. Although the dissertation opens with references to spatio-temporal changes in everyday life, the analysis turns to a focus on the epistemological frameworks of the social sciences. This is especially the case for chapters 3 and 4 but is not extended to Chapter 5. The final chapter of part one reflects upon theories that argue in favor of explaining experience and everyday life, because social theory, during the second part of the XX century, introduces the progress achieved in the phenomenological philosophy. In this perspective the distinction between changes in the paradigms of the social sciences and people's experience becomes less clear.

Deciding between distinctions of social structures or perspectives of individual agency loses relevance for the theoretical approach. The approach seeks to engage a dialogue between the macro- and the micro-scale, as this distinction is indicated throughout the thesis. The aim is to observe the social, constructive character of spatio-temporal structures: in other words, the extent to which social actions, representation, and institutions constantly struggle to structure time and space.

The empirical section describes modernization in the Chilean environmental institution as an engine of the spatio-temporal restructuration process. The argument suggests that changes to the society-nature relation are only possible by changing the

spatio-temporal structures that underpin this social organization. Chapter 6 provides a firm foundation for the study of environmental policy as one of the most powerful social mechanisms that can restructure space and time in modernity. Chapter 7 briefly introduces the general and specific objective of the empirical research, the method and the sample considered in the research. In Chapter 8, I discuss the critical discourse analysis and the narrative analysis as methodological tools, and the perspective that performs narratives as always framed in time and space is enlarged. Thus, by adding the existence of narratives that are not only contained in time and space but also structure time and space. Chapters 9, 10 and 11 address the empirical analysis by focusing on the historical context of Chilean ecological modernization, describing social narratives of ecological modernization and the socio-ecological conflict from a set of conducted interviews, and offering a critical discourse analysis of the national environmental law, respectively.

Ecological modernization in Chile is spatially and temporally connected with the country's return to democracy, and also with the major expansion of the extractive industry. Ecological modernization has factually reorganized the spatio-temporal organization of the country by primarily orienting its actions toward the exploitation and commodification of nature over those actions that strive for its protection.

The narrative and the discourse analysis shows there is no spatio-temporal structure that is always functional for the accelerated growth of extractive activities in Chile, and presumably, around the world. The first wave of ecological modernization in the 1990s, on the back of law 19.300/1994, evinces a major spatio-temporal restructuration at the macro-scale. Within this narrative, the ecological crisis is global and gradual, and the political response should adopt the same spatio-temporal framework. Acceleration of production at an expanded regional scale is possible by material means and by reducing ecological restriction of the industrial process.

The second wave of ecological modernization, which took place at the end of the 2000s and was endorsed by law 20.417/2010, exemplifies a significant spatio-temporal restructuration at the micro-scale. An ecological crisis appears to have been averted by the previous environmental institutions and by introducing abstract mechanisms to regulate pollution and obtain efficacy. The novel environmental

institution is constrained to the micro-scale, as it can only account for single projects within its immediate surroundings. Acceleration of production is based on avoiding any tally on the regional level of the ecological impacts.

The two parts of the thesis dovetail by having the theoretical reconstruction of spatio-temporal restructuration in social science and in life comfortably lead to a discussion of the search for modernization processes that confront the supposed stability of spatial and temporal frameworks. My aim here is to restore the social definition of time and space structures as places of struggle inside social life and social explanation. At the same time, I intended to recover the strengths of spatio-temporal restructuration for explaining contemporary forms of socio-territorial inequalities. This has been my way of problematizing the restructuration of time and space in modernity. Opening up ecologic narratives and discourses to critical analysis allows an alternative explanation of how it came to be that despite the greatest international concerns of environmental protection, some of the most extensive and pervasive forms of environmental commodification have emerged. The answer lies in the claim that this situation is only possible via profound changes to the spatio-temporal structure of social life.

Chapter One
Spatio-Temporal Regimes Collapse: A First Impression

Chapter Overview

Over a period of almost 40 years, since the end of 1970s, scholars have been paying increasing theoretical attention to academic works that criticize the minor role played by the categories of time and space in social science explanations. In the second half of the 20th century, a strong critique of the philosophical notions of time and space as a priori categories arose in the fields of anthropology, geography, and philosophy, while sociology lagged behind (with urban sociology being, perhaps, the only exception to the rule). In this chapter, I will lay the most basic foundations for a very intuitive approach to what could be called spatio-temporal restructuration, based on: i) two biographical episodes that could be spontaneously described as a journey into the past, which from my personal experience challenge the solidity of a modern representation of time and space, and ii) the application of this approach to a set of contemporary phenomena that are challenging the stable character of time and space. By describing these phenomena, it will be possible to advance an explanation regarding how time and space are restructured in the regional, social, and political dimensions, especially in connection with the implementation of public policy and the relationship between society and nature.

As a point of departure, a group of theories is advanced with the intention of grasping their potential to explain the spatio-temporal restructuration, either in modernity or due to capitalist development. Different authors have used modernity and capitalism as two different causes of spatio-temporal restructuration. Each of the approaches reviewed in the introduction is analyzed in two dimensions: i) the *categories of analysis*, which describe the extent of the analysis, focus on one category or both at the same time, namely time and space; and ii) the *scope of conceptualization,* when the theoretical analysis offers either middle-range theories describing time and/or space changes as a feature of capitalism or modernity development, or all-embracing theories, which means interpreting modernity as a time or space restructuration in itself.

A comprehensive critique of the social sciences approach to time-space restructuration would be an excessive task for this section, but it could be ventured the following argument: at the end of the 1970s, the Anglo-Saxon Marxist stand in territorial issues appropriated much of the French philosophical and anthropological tradition, which from different perspectives challenge the notion of objective time and space. Nevertheless, North American scholars, especially, were captivated by the need to make sense of macro-changes that came in the form of accelerating information flows and transportation interchanges on the global scale. Because of this chronological coincidence, much of the thought that ought to replenish the role of time and space in social explanations created the *paper giants* made up of de-territorialization, flowing temporalities, and spatio-temporal compression. Without discarding the relevance of those explanatory devices, this chapter has the intention to create more plausible discussions about contingent articulations of time and space in contemporary society.

1.1.- From the Heights of Machu Picchu to the Modern Spatio-Temporal Restructuration

The Heights of Macchu Picchu **(Pablo Neruda 1967**)

VI
Then on the ladder of the earth I climbed
through the lost jungle's tortured thicket
up to you, Macchu Picchu.
High city of laddered stones,
at last the dwelling of what earth
never covered investments of sleep.
In you like two lines parallel,
the cradles of lightning and man
rocked in a wind of thorns.

Mother of stone, spume of condors.
High reef of the human dawn.
Spade lost in the primal sand. […]

And the air came in with the touch
of lemon blossom over everyone sleeping:
a thousand years of air, months, weeks of air,
of blue wind and iron cordillera,
that were like gentle hurricane footsteps
polishing the lonely boundary of stone.

In 1943, the famous Chilean poet Pablo Neruda visited Machu Picchu. The following year, he presented the poem **"**The Heights of Macchu Picchu**"** (Neruda and Tarn 1967) as an ascension poem[1], which pays homage to the forgotten and anonymous builder of the city in the memorable phrase *"Rise to be born with me, brother."* The author considered this poem inside one of his larger projects that is the "General Song" published for the first time in 1950 in Mexico. This vast composition becomes an attempt to write the history of the whole of Latin America by poetry, and "The Heights of Machu Picchu" occupied the second position in the work.

The poetic form of narrating the sense of the place in the exotic Macchu Picchu and the intention to find meanings in the mysterious everyday life in this never-before-seen environment, suggests the inability of the common – or perhaps scientific – language to grasp what is beyond the rational conceptualization of time and space.

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[1] The symbolic character of the ascension is used as a device to represent the passage from life to death and eternity. In the case of this poem, it is addressed to the anonymous builder of the city.

The concepts created by modern thought to refer to the common way of residing, or better put, the common *way of living²*, are insufficient. I propose that the language be redefined to serve this purpose. Poetic language becomes the lifeguards to alternative representations, and this by indicating that what has become daily conversation/common understanding is not what has always been the case.

Taking into account the need of poetry to somehow grasp the unthinkable way of living in Machu Picchu, can we raise the question for what is the real extent of the stable and pervasive character of our modern understanding of time and space? Whenever we are confronted with ancient ruins on a trip, and particularly in museums, when we observe objects created centuries ago, a spontaneous process of reflection occurs in each of us, interrogating for the life experiences behind those architecture and the craftsmanship³. That intuitive question presented above, from my point of view, represent the reminiscence on us of a very instinctive knowledge, which sustains that time and space have not always been structured in the contemporaneous common ways. On the contrary, all this ancient building and objects could never been possible without a very different way of socially articulates time and space.

Earth, stone, ladders, altitude, reef, air, lightning, wind, condor, cordillera, hurricane are all reference to a common sense of place on the heights of Machu Picchu, while *at last the dwelling, never covered, sleep, a thousand years, months, weeks of air, polishing the lonely boundary of stone* are all allusions to the almost infinite temporality of this mountainous terrain. Both aspects speak to another way of thinking about social reality in a - continuous and forever - missing experience of time and space. Novel forms of time and space brought in by modernity are encompassed in a restructuration process that we can hardly foresee.

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² An informative reference in this regard is Michel de Certeau's "L'Invention du Quotidien. Arts de faire," (de Certeau 1980) even though this book is primarily concerned with research on the place between consumption and production, and the chance to redraw the role of the user inside a social explanation in which he or she is merely condemned to passivity or discipline. It appears very relevant for the argumentation proposed here to emphasize the brief mentions the author makes of the notions of time and space. This is especially the case in chapters VI, "Story Times," and IX, "Spatial Stories."

³ In a similar sense, it is possible to consider the reflection made by Marc Augé (2003 [2003]) in his book "Le temps en ruines," when he states in its very first sentence that the contemplation of a ruin brings us into "pure time." This pure time, in the vision of the French anthropologist, is not that of the manual of history, the museum or the restoration. Pure time is the one that has not been colonized by our always and pervasive present.

My research proposes to tell an unfinished story, the story of the "colonization of reality"[4] through something that, although very simple, is usually forgotten because of its obvious prerequisite: the continuous transportation or translocation of spatio-temporal regimes around the world. In this regard, before agreeing on an interpretation, definitions or future actions, people must reorganize their spatio-temporal universe to enable the emergence of certain common processes in positive or negative ways. From a historical perspective, this situation, however tacit, has been very dramatic. But perhaps contrary to popular belief, it has not always unfolded with violence committed by the colonizer against the colonized. Conversely, it has been deployed through every little action, for example, in the construction of a simple building, in the preparation of a modest dish or in the intimacy of a salon. All these simple routines are indeed the vehicles for the very pervasive spatio-temporal restructuration that has taken place for at least the past five centuries.

My perhaps excessive attempt to write a theory of modernity as a process of spatio-temporal restructuration would appear to be unfinished from different perspectives. But not only because of the quality of the argumentation presented. Since this question has haunted my thoughts for almost half of my life, I doubt that this fascination would be banished one day. In the summer preceding my 20th birthday, and in the process of transferring from architecture to sociology studies at the university, I had the opportunity to leave my country, Chile, and travel to Peru. The journey by bus started from Santiago, continued through the Atacama Desert up to Arica, the last city in the north, on a journey of more than 2,000 kilometers. The journey continued by crossing the Chilean-Peruvian border to arrive in the city of Tacna, moving on into the Andes to Arequipa, Cuzco and ending in Machu Picchu.

Throughout the long hours spent sitting in the bus and looking out of the windows by day, or when I woke up in the middle of the night and watched this almost

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[4] The notion of a "colonization of reality" exists in many forms throughout the critical social sciences. In this context, at least two variants become prevalent: i) the Habermassian critique of the systemic and functional organization of society, and ii) the critique made by Arturo Escobar of the pervasive notion of development, which has become socially acceptable over the decades despite all the proof of its disastrous implementation. In my perspective, "colonization of reality" in terms of time and space restructuration means to forget that both categories are not self-evident but the result of social action and struggle.

uninhabited landscape, I started to ask myself about this apparent homogenization of the territory. Perhaps the way to reflect at this moment was intuitive and not anchored in any concept; it was just a sense of wonder produced by the extended thoroughfares that are the Pan-American highways, which at least in the north of Chile and the south of Peru do not change much or rapidly. Precisely for this reason, there are many places that truck drivers consider to be extremely dangerous. There are sometimes tens of identical kilometers during which the route is no more than a straight line, and no action is required to navigate the automobile. At such times, it is easy to fall asleep from the monotony of the road and because driver moves very little.

But the notion of a homogenization of the territory was not the uninhabited condition or the landscape's monotonous character. What surprised me was the form of the settlements; small cities that are separated from each other by great distances and very long roads. Only old and deteriorated buildings marked these roads, where it was possible to get very basic services, toilets, food, or gasoline to fill up the tank.

The surprise was big upon crossing the border. The same long street appeared in front of me, and I could see the same deteriorated building stores that seemed to simply mark the rhythm of an empty space. That was the case especially at night, with the repetition of yellow lights sparsely spread out that marked, as a visible rhythm, specific distances in the middle of the deep darkness. These lights are far from being the neon advertisement from an American road movie that ends in Las Vegas; they were simple ampoules, as if by following the highway, perhaps for a little more than a week, you would eventually end up at an elegant casino in the State of Nevada. From a very general perspective, these lights are how I remember the idea of spatio-temporal restructuration starting to form in my thoughts.

After a few days, and perhaps influenced by my studies of architecture and philosophy, I proposed an argument in the form of a question to myself: Could it be possible that the initial wave of globalization was not the current moment – with its increasing interconnectivity between modes of communication and transportation – but that perhaps it already existed during the colonial era, with a certain homogenization in time and space that would become prevalent and global?

During my journey, two events in particular occurred that helped to organize this inquiry in my head: i) the trip to the Machu Picchu ruins, and ii) the visit to the Santa Catalina Monastery in Arequipa. While visiting Machu Picchu, what truly attracted my attention was the four days spent on the Inca trail. The Inca trail is the road constructed by the Inca Empire to connect all of its settlements in Peru, Bolivia, north of Chile, and even the beginning of the Amazon rain forest. Today, this trail is a very common route for tourists like me who can choose between two- or four-day hiking trips in the area around Cuzco. During the trek, I discovered many other small cities, and I could not help but attempt to imagine what normal life on a simple day in those places would have been like. How would it be to live in a *reef city between condor foam*, in the words of Neruda, or how special to the eyes from a Westerner (and a Westerner's perspective) would it be to walk home on a clear night or wake up when the first light of the sun appears in a place that seems so close to heaven, as it were. Ultimately, it became clear to me that time and space had not always been organized in the same fashion.

Figure 1. Machu Picchu as exotic place.
Left, an old placard from Pan American World Airways, PAN-AM (1927-1991)
Right, a tourist in Machu Picchu[5]

Chronologically, I visited the Monastery of Santa Catalina in the city of Arequipa first and then Machu Picchu, in the last days of January 1999. I was together with a group of friends in Arequipa when we decided to enter into what could possibly be referred to as a "citadel." The monastery has been a place of seclusion and prayer for almost

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[5] The first image (http://historyschmistory.tumblr.com) provides an example of the way in which Machu Picchu has long been represented as an exotic destination. This has been the situation since its discovery by the American scholar Hiram Bingham in 1911. The second picture (http://myproworld.goabroad.net) shows the most common representation of the city, as part of a worldwide imaginary, with the impressive mountain Huayna Picchu behind the city and a tourist in the foreground.

four centuries, starting officially in 1579. During the tour, the guide explained the organization of the place as a sort of "neighborhood" divided by the social position of the nuns, and of course, the Spanish medieval architecture that one can find in the gardens and cloisters.

The inner streets have names like Córdoba and Sevilla, in reference to the important Spanish cities regained from Islamic rule in the 13th century. My thoughts drifted to a simple day, perhaps 200 years ago in the monastery, as I imagined the smell of food cooking in the open fire, the sound of religious songs, the sight of rain entering the cloister, and I tried to guess the thousands of secrets those walls treasured far beyond the Sunday mass. In the end, it was clear to me: Time and space had been changed, because in a monastery, unlike the situation in the pre-Hispanic towns, it made sense for the first time in South America to ask for the rhythm of weeks and weekends. It was only with the Catholic introduction of a particular time structure of labor and rest that our traditional Western week manifested among the native population of the new continent.

Figure 2. Santa Catalina Monastery nowadays
Left, Cloister of the Oranges Trees (www.peace-on-the-earth.org)
Right, Main cloister, city of Arequipa, Peru (www.tourenperu.com)

Time and space are constantly restructured, and their study should take up a central place in social theory, because from the result of the struggle to maintain or convert these two categories, various social issues may derive a better and more realistic explanation. Many attempts have been made in this regard. In the Anglo-Saxon tradition, David Harvey researched *the condition of postmodernism*, Marshall Berman

popularized the Marxist sentence *all that is solid melts in the air* and Anthony Giddens with his structuration theory was especially concerned with the notion of *regionalization*. In the German circle, Hartmut Rosa with the *acceleration theory* proposed a strong line to explain modernity from the changes in the temporal dimension, and Benno Werlen with his *everyday regionalization* signified an improvement in the *action theory* approach in human geography. From the French tradition, there are Henri Lefebvre, with the very influential *social production of space*, and Michel de Certeau, with his *everyday practices*. And at the end of this very brief list, the Spanish scholar Manuel Castells cannot be missed, with his different approaches to *urban social conflict* and the *space of flows*. But if so many brilliant scholars have been dealing with the transformation of time and space in modernity or the transformation in time and space as an effect of the capitalistic logic, what would be the benefit of reflecting on the topic once again?

In contrast to the previous proposal, from my perspective in the contemporary world it is possible to notice a spatio-temporal restructuration, which even though being a *total social phenomenon*, runs with a logic tending toward disarticulation and de-synchronization rather than on the basis of coherent principles. It seems more likely that, besides a pervasive logic of acceleration, we attend multiple temporalities that are not supposed to be synchronized and for that reason will interact in a very fragile arrangement. For the spatial dimension, a similar process also emerges as a constant fragmentation of places that will hardly be reintegrated under a unitary logic. *Unity* and *logic* appear as missing references and as very strong devices to analyze the current wave of de-territorialization and de-temporalization. In addition, power and its *processual character* becomes the driving force behind spatio-temporal appropriation. Nevertheless, power does not bring about unity; on the contrary, different social actors exerting power only contribute to the unstable character of spatio-temporal regimes.

In summary, by looking at the cases of Machu Picchu and the Santa Catalina Cloister, not only the idea of spatio-temporal restructuration in modernity has been derived. Another conclusion appears possible: Spatio-temporal regimes collapse. The Incas' way of organizing time and space disappeared, and only the ruins and the poetical language could in some way restore its character for us. Paraphrasing Marc Augé, it is

possible to state that the time of ruins is a lost time, which in order to be recovered requires the help of art (Augé 2003). Santa Catalina still functions as a cloister but no longer with the same dignity that it commanded in centuries past, only the stories of the old nuns and their literary pieces bring us some of the experiences that stretch beyond their confinement, as Iride Rossi de Fiori (2008) proposes.

Nevertheless, my endeavor has no artistic dimension. I want to engage the discussion about time-space restructuration from the perspective of the social sciences, describe its processes and anticipate its consequences. This thesis looks at how time and space have been and will continue to be restructured by society through struggle and negotiation, even though this situation may not appear as obvious in people's accounts.

Figure 3. Machu Picchu historic photos
Left, photo taken by Hiram Bingham in 1913 from the Machu Picchu central area
Right, another photo by Hiram Bingham shows a panoramic view at Machu Picchu, the area
surrounded by the Urubamba River at the foot of Huayna Picchu hill
(http://www.nationalgeographic.com/inca/machu_picchu_1.html)

1.2.- Time And Space Restructuration as Phenomenon

The transformation in space and time has come to be seen as one of the central problems in contemporary social sciences at least in two senses: First, the same rise of the modern society can be understood as a radical transformation in the temporal and territorial regime; and second, modern society constantly and increasingly produces new temporalities and spatialities, which indeed represents a radical transformation of the world as we know and experience it.

In order to illustrate what is meant by space-time transformations, a set of examples will be offered. They should not be understood as complete; on the contrary, they are collected and exposed because of their particular ability to enlighten relevant dimensions of the social phenomena examined here.

Spatio-Temporal Restructuration: Some Initial Concerns

Different forms of connectivity and communication (assembly/linkage), especially between cities and persons on a macro-regional scale, can re-articulate space and time. This phenomenon of territorial increasing connectivity and communication has been conceptualized as "spatio-temporal compression" (Harvey 1990) when it refers to the acceleration in communication as a result of improvements in the transportation system or information exchanges. Consequently, the space between places connected by accelerated forms of communication is seen as increasingly irrelevant. By contrast, the process of deceleration in communication has been conceptualized as "spatio-temporal distanciation" (Jessop 2005, 2009), and it refers to the increasing separation experienced in places that are not inside the main circuit of global interconnection or communication. In the following section, the aforementioned phenomenon will be explained with regard to what I call an unequal articulation of time and space in the physical and the social dimensions.

At that moment, I want to propose a provisory thesis, which I consider a good start in the argumentation: The process of time-space compression in general refers to an extra-regional scale, even if it could also be experienced in an intra-regional one. Time-space distanciation also appears easily in an intra-regional dimension, even though it can also be seen at higher territorial levels. Following the last argument,

time-space compression shows the acceleration of the communication, especially between cities that are located in different regional scales (intra-national or extra-national) e.g., New York City, London and Tokyo in the famous conceptualization of global cities by Saskia Sassen (2001) or Los Angeles, Chicago and New York City as business network at the national level[6]. The compression in this case is primarily seen as the dissolution of *long distances' spatial restrictions*, because the reduction of spatial barriers in the short distance has historically assumed other socio-spatial formats, particularly in the combination of urbanization and motorization[7].
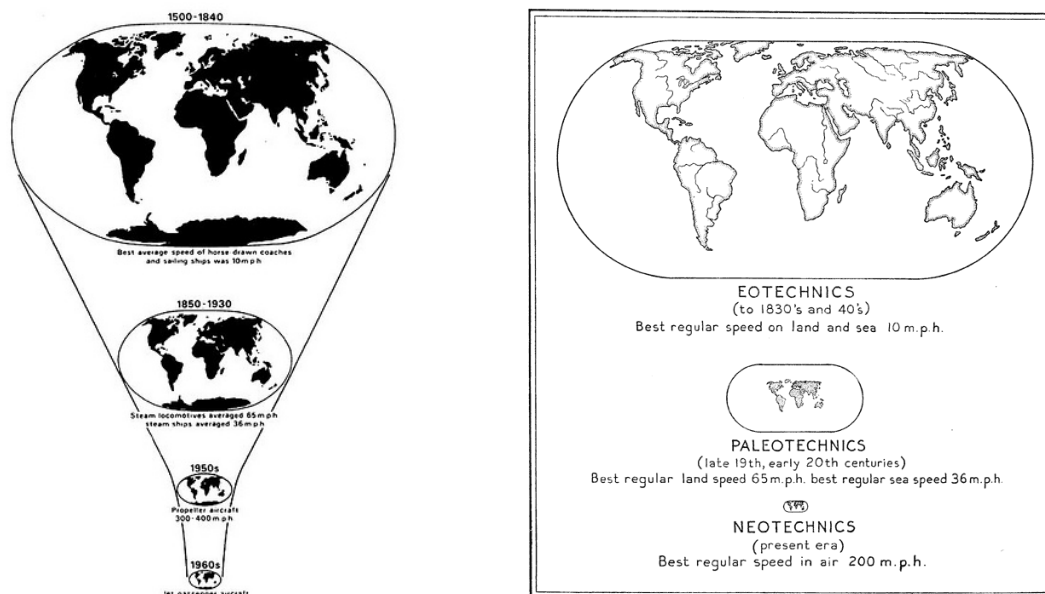
Figure 4. Time-Space compression as proposed by David Harvey
Left, "The shrinking map of the world through innovations in transport" (Harvey 1990: 241),
Right, "Technical progress in travel time, world economy in transition" by Eugene Staley (New York: Council on Foreign Relations, 1939: 6) in Wolf Schäfer (2005)[8]

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[6] An interesting approach to the conditions of New York City, Chicago and Los Angeles as global cities could be found in Janet Lippman Abu-Lughod's (1996) "Comparing Chicago, New York, and Los Angeles: testing some world cities hypotheses," in Knox, Paul Leslie, Ed.

[7] The argument seeks to show that there is a sort of *different materiality* in the social spatio-temporal arrangement deployed to deal with the natural restriction imposed by distance. If flight connections and rapid trains have been used at the regional, national or international scale, urbanization, motorization and urban highways are the typical modes to overcome distances at the intra-regional scale.

[8] The argument presented in this chapter could be summarized as follow: *Every wave of time-space compression has a consequent form of spatio-temporal distanciation.* This summary presents similarities with the proposal of Schäfer (2005), who argues that the representation of a shrinking world hides the fact that at same time knowledge about the world has increased substantially in the past five centuries. This means that in term of "possible relations," the chances of interconnection inside the earth grow together. In other words, it is coextensive to the improvement in communications systems. Therefore, the shrinkage is by no means an overall tendency.

The same explanation could be proposed for the information exchange, which shows historically different forms to deal with long- and short-distance relations. In non-urbanized areas like natural reserves, forests or mountains, communication between security teams and other kind of workers, for example, is still extensively relayed via radio transmitters. By contrast, in order to communicate with work colleagues or relatives across continents, the Internet has become the central mode in the form of e-mails or smart phones, and software applications like Skype, WhatsApp and Viber. They are becoming the most-used interfaces, even more so than telephone landlines or phone connections between mobile devices[9].

Every region experiences both phenomena in this sense: the acceleration of the general communication with places outside the regional fringes, and because of the same process, or as another wave in the same movement, the deceleration of the communication with places inside the region. The paradoxical effect of this situation is that every region experiences in their own way the fact that long distances are crossed faster than short distances, measured objectively as much as relationally. This fact allows us the possibility to formulate the following argument: Besides time and space compression or distanciation there is an unequal integration of places related with transportation and communication exchange.

However, it is also possible to refer to a socially unequal articulation of time and space when we observe the same set of phenomena, not by distributing advantages and disadvantages unevenly only between different places but also between different social groups. There is already an extensive amount of empirical as well as theoretical examples of this social fact[10]; nevertheless, it is relevant to mention that the centrality of the socially unequal articulation of time-space as an analytical category has since had the power to challenge the *asocial* representation and the *modern imaginary* of overall progress in terms of, for example, speeding up transportation systems.

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[9] Smart phones are understood here as forms of Internet connection, because they use specific computational protocols for information exchange (Symbian in the origins for Nokia, Sony Ericsson and Samsung, iOS for Mac iPhone, even as Samsung is moving to Android, and Nokia to Windows OS). Seldom will someone with an iPhone, Android or ICC, make international calls via a normal telephone landline or the mobile phone connection available in its device, when he or she has the possibility to use Skype or other software such as Viber that is available for free and without extra charges for phone calls.

[10] For a better review of this topic, see Bærenholdt (2004), May and Thrift (2003) and Sibley (1995), among many others.

The artistic representation of these imaginaries could be seen in pictures and posters, in other words, illustrated placard history[11]. Especially after the art-deco style, using the innovations of railways, airplanes and ships as a central motif, the placards construct a very particular modern and industrial aesthetic[12]. Scenes of everyday happiness are proposed in such representations, and a lifestyle based on astounding mobility appears to be within everyone's reach. But this is not exactly the case: Fragmentary realities anchored in the mobility process, as well as in places of residences, surface everywhere. In the same way, life styles that compel people to cross long distances between cities in a relatively short period of time by using fast trains or airplanes are similar to the ones where people spend more than half a day just commuting to work within the city.

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[11] For a general perspective on placard history, see Appelbaum (1990). For a discussion of railway posters, see Cole and Durack (1992) and Zega and Gruber (2002), and for more insights on flight posters, see Villard et al. (2000).

[12] From my perspective, the improvements in transportation systems (trains, planes and boats) have been represented in placard history with reference to two different aesthetics designating two different artistic periods: The one is connected with an initial moment, when the transportation system is embraced by the art-deco aesthetic in a more romantic representation, and the other is connected with great technological improvement and the use of an abstract and rational aesthetic for the industrialized representation. Both forms of placard are very different from an artistic perspective, but together they share the modern and idealistic view of the improvement in transportation as an improvement in people's quality of life. These developments are part of an extended social enterprise that will one day be accessible for the whole society.

Figure 5. Three different aesthetic of transportation improvement
From left to right, "Monte-Carlo aviation competition," Monaco, early 1910; "Aviation Meeting Neuchatel," Switzerland, 1928; and "Graf Zeppelin. Hamburg-America Line," Germany, 1936[13]

Another phenomenon could be referred to as spatio-temporal re-articulation by migration. In this case, many readers would possibly argue for a certain kind of connection with the previous explanation about the unequal social articulation of time-space, but let me propose here a central distinction in the nature of constraints and unconstraints (releases) that have been analyzed. The migration phenomenon could be seen as a particular result of the political organization of time-space, because it is the political system (the social institution) that rules over the spatio-temporality of immigration. Two forms appear with clarity: The one is the accelerating mobility among countries with international agreements, and the other is the decelerating mobility among countries that avoid certain immigration flows. As an example of this situation, one could mention how certain non-Western economical elites lose time with international movement simply because of a lack of bilateral agreements. In this case, the political dimension becomes the one that alters the general articulation of time and space.

Other examples occur when the immigration process is decelerated in a radical way, as is the case of the illegal migration of Africans to Europe, or of Mexicans and

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[13] The images were retrieved from various websites that sell so-called *vintage posters.* It is possible to observe how the aesthetic evolves, and the life motif changes, but the idea of social improvement thanks to the progress in the transportation system remains

Central Americans to the United States. In both cases, the distance covered is far beyond the measurable geographical and physical constraints. Here again, the spatio-temporal dimension is re-articulated primarily by the political organization. In the latter case, I propose a deceleration beyond the spatio-temporal constraint, because the time used to immigrate and reach the place desired – a new country – would exceed the time needed to walk or to swim between them. In other words, the political constraint becomes far greater than the human body restraint. This is exactly the motif engaged by the Mexican movie "Norteado", which describe the sort of *time in-between* experienced by an immigrant in the USA border[14].

Some readers may notice in the example above a certain connection between the political restructuration of time and space and the religious notion of "peregrination" that is the walking movement between a place and a destination (das Ziel und die Pilgerfahrt). Subsequently, it could be easy to make an analogy between international immigration and the Jewish myth of the exodus from Egypt to the Promised Land. This comparison might be interesting because exodus and immigration are both examples of spatio-temporal restructuration. In the religious narrative, the Jewish exodus takes place over a lifetime, lasting until a new generation appears without sin. From the spatio-temporal restructuring perspective, this temporal condition could be interpreted as slower than any successful immigration in contemporary days, in which success only means reaching the expected destination and surviving the journey. Nevertheless, in the territorial dimension, peregrination never falls beyond the movement capabilities of the human body. The very notion of peregrination has one of its foundations in the human capability of movement and in the time needed by the soul to purify itself. In short, if immigration is a re-articulation of time-space in the political realm, peregrination is a traditional time-space re-articulation in the religion

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[14] It is exactly in this sense that the notion of "territories of wait," proposed by the French Program of research ANR-Terriat, becomes relevant. Below, I quote a part of the objectives of this academic endeavor:
"Le programme se propose d'étudier les phénomènes de mobilité et de déplacement dans les sociétés atlantiques sous le rapport particulier des «territoires de l'attente» dans lesquels ces derniers s'inscrivent. Le parti pris de ce projet pluridisciplinaire est de privilégier l'observation des formes et interactions spatiales des individus ou communautés en situation d'attente. Or, ces temps d'attente, à l'intérieur desquels opèrent silencieusement des transformations sociales, apparaissent très souvent négligés par les sciences sociales. Il en va de même pour les territoires qui accueillent ces sociétés en attente, trop rapidement considérés comme marginaux. Il s'agit de réintégrer ces espaces et ces temporalités dans une perspective constructive, afin de comprendre comment ils participent de la définition des identités sociales et spatiales des individus en déplacement." (http://www.openedition.org/8578).

sphere for the particular case in the Judeo-Christian tradition but also present in other faiths[15].
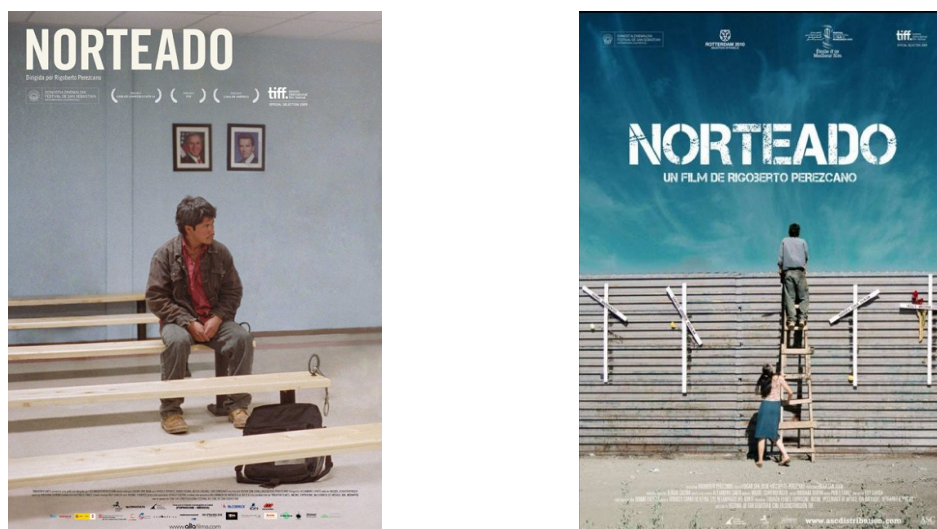
Figure 6. Two posters of the Mexican film "Norteado"[16].

The fourth phenomenon of time-space re-articulation could be called the construction of *transitory places* by the State or public policy action. In this case, I purposefully use the word *place* in the formulation with the intention to grasp the meaningful condition of certain territories defined, for example, to enact a particular public policy. In this regard, transitory places are a particular articulation of time and space, because they express a significant form of relation between inhabitants and government authorities in the territory. The transitory conditions express, however, a certain degree of instability in the spatio-temporal definition of those territories for intervention by the State. Within a public policy organization that is increasingly oriented in a managerial way (Harvey 1989), definitions of territories are made and unmade extremely quickly. In this context, the possibility to create temporal and spatial coincidence, synchrony and synergies, is constantly challenged by public action, which dissolves the Keynesian orientation (Jessop 1994) to "equalize"

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[15] Matthew Sleeman's "Geography and the ascension narrative in Acts" (Sleeman 2009), which examines the theological description in the New Testament by means of a novel spatial interpretation about space and place, reflects a similar approach.

[16] In the film "Norteado" or "Northless" (Rigoberto Perezcano 2009), a Mexican citizen intends to immigrate to the United States. It is especially concerned with the difficulties of the process, and what is supposed to be just a transition ultimately becomes a long period where people deploy intense affective ties. This sort of "in-between period," slowed down by the restrictions of the political system, is intended to exemplify phenomenon three, spatio-temporal restructuration by the action of the political system.

(Brenner 2004) different regions inside the national territory in longer and more stable time spans.

Finally, the fifth phenomenon, which lies at the basis of the interpretation of time-space restructuration, is related to capitalistic mega-projects. They are concerned with the extraction of raw material and energy production and take place in different parts of the world, but especially in the countries that could be characterized as having a *rapid entrance* to capitalistic and a neo-liberal form of regulation[17]. These mega-projects re-articulate time and space for different reasons and in different ways, including: i) because of the need to increase their possibilities to be approved by the different environmental regulations at the national level, ii) because they will promote a particular interpretation of the local, national and global scales to legitimize the distribution of advantages and disadvantages in the territory, and iii) because they are in a particular institutional procedure, e.g., the environment impact assessment, which should define the spatio-temporal framework to quantify environmental effects and to propose forms of reward. In the context of capitalistic mega-projects, the three aforementioned situations re-articulate time and space by introducing a *compensatory principle* in the society-nature relationship and by radicalizing speculative rationality in the ecological sphere. These situations impact the performance of the socio-ecological conflicts and their possible solutions in a dialogical way, as will be shown in the empirical part of the thesis.

Thus far, a group of phenomena that represent particular forms of time-space re-articulation in modernity has been enumerated. The following possibilities were presented:

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[17] Under the notion of rapid entrance to neo-liberal forms of regulation, I want to express the situation of a collective of countries that have been, in a very short period of time, completely reorganized by the capitalistic social orientation. For more on the emblematic case – Chile during the 1980s under the influence of the so-called "Chicago Boys" – see Valdés (1995). This was also the case, at the end of the 1990s, for some other countries in Latin America and especially in Eastern Europe. The case of Asia has been addressed under the notion of the four Tigers or Dragons, which refers to Hong Kong, Taiwan, Singapore and South Korea, and their rapid industrialization experience between the 1960s and the 1990s.

1.- Spatio-temporal restructuration with a basis in the reorganization of geographical hierarchies, in terms of accelerated and decelerated transportation and communication exchanges, in other words, selective spatial restructuration.

2.- Spatio-temporal restructuration that frames actions selectively according to social conditions; in other words, specific spatio-temporalities – accelerated and decelerated – become available to the members of different social groups.

3.- Spatio-temporal restructuration of geographical areas or social domains by the control of a political system that limits mobility and dwelling. In other words, a double process of time and space restructuration appears when the political system restricts social participation and thus produces a dycothomy between places of inclusion and residual areas.

4.- Spatio-temporal restructuration that selectively defines areas and temporalities as the target of public policy. In this way, extremely unstable geographies are created by the State in what can be labeled "transitory places."

5.- Spatio-temporal restructuration in environmental issues, which means the creation of definitions, discursive dispositive, normative frameworks and a set of allowed or prohibited practices that reframe the society-nature relationship. In this dimension, the spatio-temporal restructuration is very explicit, because the definition-interpretation-action coupling achieves a unitary logic.

In the following table, it is possible to address each of the five proposed spatio-temporal restructurations and schematically observe the typical mode in which they operate, and the predominant dimension in which they act. A very interesting finding in this scheme is that every spatio-temporal restructuration acts simultaneously in both an active and a passive way. In other words, every actively deployed action to restructure time and/or space will always have consequences in territories or groups that have not been directly undergoing a time-space transformation. The unavoidable relational character of social life could very well explain this situation.

Phenomenon	Typical mode of operation	Dimension restructured
Selective spatial restructuration of time and space	Reorganizing the spatio-temporal distance at different geographical scales. Active and passive restructuration	Mobility, communications and geographical relations between places
Restructuration of time and space by unequal social integration	Distributing the advantages and disadvantages of the spatio-temporal restructuration unevenly between different social groups. Active and passive restructuration	Social distribution of benefits and damages produced by spatio-temporal restructuration, especially in the regional dimension
Restructuration of time and space by political restrictions	Limiting access to domains or areas by political restrictions to movements and dwellings. Active and passive restructuration	Spatio-temporality experienced by different national groups at the international level
Public policy definition of places as a form of unstable spatio-temporal restructuration	Selectively defining spatio-temporalities for public policy actions Active and passive restructuration	Place in different scales, by the spatio-temporal localization of the governmental action
Environmental restructuration of time and space in reorganization of the society-nature relationship	Reorganizing space and time inside the holistic process of the society-nature relationship Active and passive restructuration	Delimitation between society and nature as discourse, definitions, practices and procedures

Table 1. Five phenomena as examples of spatio-temporal restructuration.
The table describes the archetypal phenomenon behind spatio-temporal restructuration, the way of acting in those conditions, and the reorganized dimension.

With a more detailed analysis, it is possible to state that while geographical, political and public policy construct a kind of geography that frames social action, the social restructuration of time and space will be the form in which the aforementioned dimensions are distributed unevenly among social groups. Furthermore, environmental spatio-temporal restructuration is the most explicit form of restructuration among the five presented, because it acts on the level of the common definitions of time and space. In other words, whenever a reorganization of society-nature relationship is presented, an overall transformation at the level of social definitions, representation, actions and procedures begins to takes place.

From another perspective, it is possible to observe how all the forms of spatio-temporal restructuration listed above influence social reality in both an active and a

passive way. Therefore, the research should not only consider explicit redefinitions of time and space but also social actions, which have the capability to indirectly generate an imbalance in the temporal and territorial framework. In other words, there is always a side effect of each wave of spatio-temporal restructuration. Some physical places and social domains are directly transformed, while others are indirectly affected or become modified in a passive way. This situation is highly pervasive and occurs every time as a consequence of the alteration in previous spatio-temporal regimes.

Theoretical Endeavors That Imply Spatio-Temporal Restructuration

In the following section, I will return to the task of placing different theoretical projects that examine time-space transformations into a sociological framework that considers two dimensions for analysis: i) the scope of theories in terms of their conceptualization of the modernization process and ii) the particular form in which the connection between time and space is conceptualized in these theories. In the following section, I will explain the reach of these two variants.

When we declare that transformations in the temporal and spatial regime are one of the key features in order to explain modernity, we are postulating a theory of modernity that considers the transformation in time and space, as Hartmut Rosa states for time, "In terms of its structural and cultural impact on modern society, this change in the temporal structures and patterns of modernity appears to be just as pervasive as the impact of comparable processes of individualization or rationalization" (Rosa 2003: 4). By contrast, when we state that *modernity creates new spatialities or temporalities that clash with the human and social experienc*e, our understanding is moved in the direction of middle-range theory approaches, which would explain the emergence of new places and novel forms of social interaction, or their absence. These middle-range theories would always stress some tension between space and place, in which the last concept possesses some meaning for the inhabitants, while the former refers to the physical dimension or some forms of conceptual abstraction[18].

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[18] For an exhaustive reference to the theoretical distinction between space, territory and place, together with its implication for socio-territorial research, see Campos-Medina and Yavar (2005)

Here follows a description in greater detail of the previous arguments, with reference to four theoretical projects:

1.   A theory of modernity based on the transformation of the temporal and spatial regimes can be teased out with success but only *partially* in the theoretical projects of authors like Hartmut Rosa (2003), who claims, "In terms of its structural and cultural impact on modern society, this change – acceleration – in the temporal structures and patterns of modernity appears to be just as pervasive as the impact of comparable processes of individualization or rationalization. […] However, contrary to the other constitutive features of the modernization process – individualization, rationalization, (functional and structural) differentiation, and the instrumental domestication of nature – which have all been the object of extensive analysis, the concept of acceleration still lacks a clear and workable definition and a systematic sociological analysis." The theoretical proposal of Rosa "partially" engages a theory of modernity based in the spatio-temporal restructuration, because his theoretical endeavor gives prominence to the temporal over the spatial dimension in the analysis. In this strategy, the argumentation gains strength in a temporal sociological perspective but loses explanatory potential regarding the territorial organization of time. An explicit combination of both dimensions, and their explicit analyses, is what I propose to call spatio-temporal restructuration. This possibility remains open as a theoretical perspective.

2.   Concurrently, it is also possible to find theories that explicitly address the issue of the modernity as increasingly creating new temporal and spatial realities. This would be the case in the notions of "non-places" present in the work of Marc Augé (1992 [2000]) and the "empty spaces" of Zygmunt Bauman (2000), among others. For the French author, the most advanced stage of modernity, or in his words, "supermodernity"[19], would be in itself the producer of a particular spatio-temporal arrangement, which remains in opposition to the anthropological idea of places; "ce que nous appellerons "non-lieux" [l'est] par opposition à la notion sociologique de

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[19] To address the work of Augé and to classify it as a sort of new spatio-temporality created by the modernity may not be immune to criticism. His notion of "supermodernity" is much more complex and should not be thoughtlessly conflated with the traditional analysis of modernity. In his own words, supermodernity is characterized by i) acceleration of history, ii) shrinkage of the world space, and iii) individualization of cosmologies (Augé 1995). "Hacia una Antropología de los Mundos Contemporáneos"

lieu, associée par Mauss et toute une tradition ethnologique à celle de culture localisée dans le temps et l'espace." (Augé 1992: 48) "Si un lieu peut se définir comme identitaire, relationnel et historique, un espace qui ne peut se définir ni comme identitaire, ni comme relationnel, ni comme historique définira un non-lieu." (Augé 1992: 100)[20]. Here, the relevance of the theoretical project is not necessary in the spatio-temporal character of every possible non-place, because the author only considers them as "ideal types." By contrast, the theoretical strength of this perspective is the reference to the last stage of modernity as an engine to spatio-temporal restructuration in the form of an increasing production of non-places, which becomes a necessary part of contemporary people's lives.

Using the conceptualization of Kociatkiewicz and Kostera (1999), Bauman offers the notion of "empty places," which he defines as "places to which no meaning is ascribed. They do not have to be physically cut off by fences or barriers. They are not prohibited places, but empty spaces, inaccessible because of their invisibility. If sense making is an act of patterning, comprehending, redressing surprise, and creating meaning, our experience of empty spaces does not include sense making" (Bauman 2000: 5). He would strengthen the futile condition of the empty places by proposing that whenever a place carries no meaning it becomes unseen. Moreover, he argues, "no negotiating will arise in them" (Bauman 2000: 103).

The argument continues by using the example of a trip the author made to a city in Southern Europe. On the way from the airport to the hotel in the downtown, led by a young scholar, the ride took almost two hours, because it was simply impossible to avoid the crowded city center. In the story, the way back from the hotel to the airport lasted less than 10 minutes, because Bauman decided to take a taxi on his own, even though the taxi driver would go "along winding rows of shabby, drab, God-forsaken slums, full of rather uncouth and evidently idle people and unwashed children in rags" (Bauman 2000: 104). It is very difficult to believe the differences of time stated by the author (almost two hours in the first situation, compared with less than 10 minutes in the second), but the argument is clear: The area not known by the young middle-class

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[20] During the thesis the quotation in French and German language have not been translated due to the extended knowledge of these two languages among the readers. All other languages, especially Spanish and Portugues have been translated by the autor.

scholar is just an empty place on his mental map. However, the opposite is true of the taxi driver, who knows the layout of the city like the back of his hand. In Bauman's argument, emptiness of place is in the eyes and feet of the beholder, and in this sense, the characteristic relational problem of the urban life appears in contemporary city landscape.

On the basis of the two examples above, it is possible to argue that spatio-temporal restructuration is not only the active process of places gaining advantage or relevance over others. In very general terms, it is also the consequences that are passively distributed to the rest of the territory as a result of the preeminence of one type of spatiality. Even when the references to the spatial dimension in Augé's example of non-places and in Bauman's example of empty places is preponderant, in both cases the territorial problem appears to be connected with the changes in modernity, and from this perspective they become temporal concerns. Nevertheless, the particular temporality deployed by these two types of spaces should be the objects of empirical research and not the object of theoretical analysis alone.

3.   A third possibility exists that could help us to grasp the role spatial and temporal transformations play in modernity. This time, however, the conceptualization suggests a connection with the dynamics of capitalism. Theoretical projects of authors like David Harvey and others scholars who seek to explain the global economic restructuration (Jamie Peck, Nik Theodore and Neil Brenner[21]) can be understood in such a way. All of these authors pursue an explanation of the transformation in time and space not as the key element in the modernization process, but as a key experience of modern society as a result of the re-organization of capital.

The scope of these theoretical approaches should be studied in connection with the major project to which they belong, that is, the Marxist traditions. The Marxist tradition is not explicitly an account about territory or space. Nevertheless, despite this lack, this approach to economic history as well as to urban studies and geography has contributed to reengaging the spatial dimension inside social explanation. In the

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[21] The three authors together or in different pairs have more than ten papers written between 2010 and 2012 addressing the issue of geographies of neo-liberalization and global productive restructuration, for example, in their interesting critics to the *varieties of capitalism theory* Peck and Theodore (2007).

opinion of many authors the temporal dimension was always present in the historical account of the transformation in the production modes. Consequently David Harvey proposes "Since modernity is about the experience of progress through modernization, writings on that theme have tended to emphasize temporality, the process of becoming, rather than being in space and place. Even Foucault (1984: 70 pp), obsessed as confessed itself to be with spatial metaphors, wonder […] why it happened that 'space was treated as the dead, the fixed, the undialectical, the immobile' 'while time, on the contrary was richness, fecundity, life, dialectic' " (Harvey 1990: 205).

There are many possible ways in which a Marxist perspective engages a reference to the space as central element in social conflict and transformation. To make a deep account of these possibilities is not the intention of this section, but it is however in order to show some possible strategies. The different perspectives proposed by urban studies and critical geography may be a good point of departure. In geography the Marxist perspective have been accessed in its unique capability to generate a unitary framework for the social analysis of localized phenomena, as Neil Smith (2008) points out in the introduction of his proposal of uneven development. In urban studies, following the interpretation of Manuel Castells (2002) the French school of Marxist urban sociology revolved around four issues "the social production of space" and "the right to the city" in the work of Lefebvre and "collective consumption" and "social movements" proposed by the same Spanish author. In this last case, the traditional Marxist questions have been territorialized.

4.   The fourth and final way to understand spatio-temporal re-articulation in connection with the scope of different theoretical approaches follows the formulation of Anthony Giddens. "Most social analysts treat time and space as mere environments of action and accept unthinkingly the conception of time, as measurable clock time, characteristic of modern Western culture" (Giddens 1984: 110). These are the words used by the English author to introduce his reflections on time and space and his central concept of "regionalization." Later, he would be even more radical and state that with the exception of some geographers, "social scientists have failed to construct their thinking around the modes in which social systems are constituted across time and space" (Giddens 1984: 110). But what could constitute such a failure? In his

initial attempts at an answer, and following Hägerstrand with time geography, the author stresses the "routinized character of the daily life," to present time and space as constraints to social action. From this point of departure, the notion of regionalization refers to zones "of time-space in relation to routinized practices" (Giddens 1984: 119). It is not my intention to discuss this approach in-depth at this time but to point out that conceptualized space and time in the first intended action theory, in their capability to constrain action, lose the possibility to account for the capability of action to structure time and space. In other words, action was *regionalized* to the same extent that loses their power to *regionalize*.

As an advance in action theory, the research project presented by Benno Werlen helps to fill this gap with the notion of everyday life regionalization. He states, "the bordering of spaces in the broad sense, which should be seen as a means of everyday activities, never as their aim…" (Werlen 2004a: 47), or in a more explicit formulation, "*space* is an element of *action* and not *action* an element of *space*, as a majority of geographical approaches – implicit or even explicitly – still claim" (Werlen 2004a: 48). Here, the main difference with the conceptualization that presents modernity as the engine for new spatio-temporalities is the theoretical movement toward social action as the only means to create, and therefore to structure, time and space. With Giddens' proposal, it becomes necessary to undertake how, from the issue of the "situatedness character of interaction," it is possible to advance an explanation of the emerging social level as spatio-temporal restructuration. Answering this question may open the door to the conceptualization of modernity as a particular wave of spatio-temporal restructuration.

Even if the previously mentioned classification could be seen as too general for many readers, it is very useful with regard to the goal of positing a brief taxonomy that would orientate the readers in the present theoretical perspective. At the same time, from this classification, it is possible to derive two central dimensions of every analysis about the structures of time and space in social sciences: i) There are different scopes in the research about time space structures, and they will illustrate the role this transformation plays in the modern society for different authors, in other words, as a primary transformation that has the power to reorganize society, as a secondary change but with the power to reorganize the social relations indirectly, or

as an epiphenomenon of the modern society, which in itself is the motor of the social change; ii) The research in the changing structures of time and space generally concentrates its explanatory capabilities on one of the abovementioned dimensions – time or space – and therefore, theories that undertake both are very unusual. In general, this procedure can be explained by a theoretical as well as a methodological technique, which in order to achieve depth in one of the two categories sacrificed the other.

Category under analysis Scope of conceptualization	Spatial change	Temporal change	Spatio-temporal restructuration
Changes inside modernity	Non-places, empty places	Social time (Elias)	Space and place the perspective of the experience (Yi-Fu Tuan)
Changes as consequences of capitalism	Global economic restructuration, the myth of de-territorialization (Haesbaert)	Everyday time organization restructuration (e.g. working time, life periods time)	Time-space compression, time-space distanciation
Modernity as restructuration	Everyday regionalization theory	Time acceleration, theory	"All that is solid melts into air," Marshall Berman and the theory of Ecological Modernization

Table 2. Theories about time and space.
Typologies regarding different scopes and categories of analysis in theoretical perspective about spatio-temporal restructuration[22].

Nevertheless, any research on time necessarily explains certain dimensions of the territorial transformation and vice versa. Here is the reason why; it becomes necessary to consider a wide range of theoretical propositions in order to find useful commonalities to approach the research of spatio-temporal restructuration. On the basis of the statement (i) presented in the paragraph above, the question for the scope and the explanatory power of a group of theories focused on the changing structure of time and/or space acquires relevance, while considering statement (ii), it is raised the question of the articulation of the temporal and territorial dimension in the argumentation of different theoretical perspectives.

In the following sections, I will introduce some necessary theoretical steps that will serve to address the research about spatio-temporal restructuration. But before

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[22] The columns show the categories analyzed (time/space) and the rows present the scope of the analysis (modernity phenomena, capitalism, theory of modernity).

engaging in this task, two other complementary challenges must be faced: i) How to re-interpret a theoretical proposal that easily concludes the annihilation of space in time or in the same fashion, overstresses the argument about the de-territorialization process; and ii) From which social theories is it possible to build up a satisfactory theorization regarding the central role played by transformation in the time-space structure and regime in modernity.

My response to the first challenge will be to demonstrate how the criticism about the space annihilation in time, it is a misleading theoretical representation. The form in which time and space are articulated; it is allways socially constructed and not unavoidable social destiny. A brief analysis of those approaches to de-territorialization reinforces the need of an interconnection between the transformation in time and space as a central motor of social change in modernity.

Regarding the second challenge, there are two theoretical perspectives that would help to organize the analysis of spatio-temporal restructuration in modernity: the now popular notion of "social production of space" proposed by Henri Lefebvre (1991), and the "critical realist" approach specially developed by Margaret Archer (1995). With Lefebvre's term, it is possible to support the thesis that current capitalism performs as a particular temporal and spatial regime that *produces* the realities in social conflict with a complex interplay between economy, society and culture. From Archer's approach, it is possible to recover the need to engage the dialogue between every level of social analysis, agency, structure and culture, while avoiding subsuming or conflating different social realities with each other. In this sense, spatio-temporal regimes belong to the social interplay between agency, structure, agency, and culture.

Returning to the notion of *social production of space,* I claim that a particular characteristic of the current temporal and spatial arrangement is the unfolding of the social process, which produces or re-produces the same realities under social dispute. In the particular case researched here, time and space emerge as something to create and not only to be distributed. Because its social production and spatio-temporal

regimes are no longer inside a "zero-sum" reality[23], they are not abstract social realities to constrain or be distributed by action. Spatio-temporal frameworks and regimes are socially produced, and together they can serve as a place for social dispute and conflict. I will come back to these propositions later in the text.

Returning to Archer's work and her social realistic approach, it is plausible to introduce the problem of changes in the temporal and spatial regime as a central part in the double question that she makes regarding the relation between agency and structure, and therefore, the relation between agency and culture. In other words, it is possible to interpret the changing of the spatio-temporal structure and regime as a particular social phenomenon, perhaps the most intriguing in social science, because it has the capacity to integrate the individual, social and cultural levels in an attempt to explain its alteration and/or maintenance. Time and space as a structural dimension organize the social experience but at the same time are possible objects of social production. Precisely in this sense, Karl Marx's famous statement of "Men make their own history but not in circumstances of their own choosing" can be paraphrased as "Men re-organize the temporal and spatial structures but always inside temporal and spatial regimes that are not their own decision." As a cultural reality, time and space are symbolic systems from which it is possible to derive meaning and orientation in social life. Nevertheless, they are also thinkable as spaces for negotiations, in the sense of re-signification by the human subjectivity, their understanding and their actions.

In the case the proposal is found to be acceptable, opportunities and constraints will appear. The analytical potential of a realistic approach can be used to deal with the question of restructuring on the time-space regime, and as a constraint I will assume the tension conflates the different dimensions involved in this analysis with each other. In the following quotation, Archer (2004) shows the parallel between the research in agency-structure and agency-culture. In my case, this parallel is even clearer, because the temporal and spatial regime can simultaneously be understood as

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[23] Zero sum is a concept typically used in game theory to represent a closed system in which the sum of all gains equals the sum of all loses. The argument proposed that time and space have been perceived as a sort of zero sum in social sciences, and because of that an abstract amount can only be distributed. Nevertheless, conceptualizations such as that of Lefebvre challenge this common belief and propose the social production of what I call the "same categories under social dispute."

a particular form of structure and culture. And because of that, they are always in interplay with the individual level.

"The problem of structure and agency has rightly come to be seen as the basic issue in modern social theory. However, in acquiring this centrality it has completely overshadowed the problem of culture and agency. The main thesis of this book is that in fact the two problems do directly parallel one another: they raise identical difficulties and the method by which these can be resolved turns out to be exactly the same." (Archer 1995: xi)

As we empirically observed in the previous paragraphs, there are diverse ways to theoretically articulate the relation between time and space in social science research. This articulation could lead to a variety of statuses, and I will summarize them here as follows: i) the radical negation of one of the two dimensions – temporal or spatial – in the analysis, which commonly are included in the notion of annihilation; ii) the selective omission of one of the two dimensions, which can be seen as a methodological strategy to deepen the analysis of the one that is considered; iii) the insufficient integration of both dimensions as a way to tackle the phenomenon of temporal and spatial disintegration in advanced modernity; iv) the integration of space and time inside a bigger project of social theory; and v) the integration of both dimensions as a way to create a theory of modernity based on the particularities of the modern temporal and spatial structure and regime.

It is important to note that this last proposal has been less explored in the social sciences and lacks a systematic examination because of a particular "work division" between different social science disciplines. In general, the traditional division of sciences gives to history the study of time, to geography the study of space, and to sociology the study of society as emergent phenomena, without properly thematizing its spatio-temporality. In this very general proposition, it is still possible to glimpse the complex connection between social science explanations and the social articulation of time-space. Considering sociology, its interest in social relations has not been clear enough to transform the common representation of time and space as the scenario of the society and social change into a more dynamic and comprehensive proposition. In general, the most advanced conceptualization of the nature of space

and its implications for social research have originated in geography or urban sociology. The same occurs with the notion of time that is highly developed in different forms of history, especially micro-history, and in some variants of time sociology, but not in the general discipline.

With the goal of promoting research in modernity as a temporal and spatial structure and regime, and also of filling the gap mentioned above, I propose two perspectives for the discussion: i) First, at the micro-level, every phenomenon in the temporal dimension has its correlations in the spatial dimension and vice-versa; for instance, whenever someone explains the problem in an interpersonal relation as an unfortunate desynchronization, "we met each other at a really bad time for me," or "it's not your fault, it's just a question of time." In both cases, the explanation refers implicitly to the spatial dimension. Timing is only problematic in a history without a previous moment of spatial coincidence. Looking at the problem from the other side, it is easy to see why one would never conceptualize a problem with a neighbor exclusively as a question of time, but of course as a question of vicinity.

In the previous example, it can be said that: i) the spatial dimension always remains in the background of our conceptualization, but not because of its irrelevance; on the contrary, because its character is "taken for granted"; and ii) considering the macro-level, the central focus is not in the complementarity between time-space dimensions in the individual experience; on the contrary, it is the overall re-articulation of time and space that appears as an implicit consequence of every wave of de-articulation in the temporal and spatial dimension. When we try to reach the social level, the central phenomenon for research will be on a collective scale that could be the global society, the supranational agreement, the National State or simply different social and local groups.

Whenever we attend a process of de-territorialization, for example time-space compression, a wave of temporal-spatial distanciation appears in the form of the places or the collectives excluded from this particular and accelerated circuit of connection. For the illegal immigrants at the borders of the developed economic world, the dramatic deceleration is an example of unequal integration, but relative to social collectives and not necessary or primary to places. The increasing and

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sometimes relational distanciation of the world periphery, as a consequence of the improvement in the possibilities of communication of the center places and developed economies, expresses the unequal integration of territories. The following quote by the Brazilian author Rogério Haesbaert easily expresses that there is no such thing as de-territorialization, because even the decreasing relevance of space is indeed a social form of relation with space.

"Decretar una territorialização absoluta ou o "fim dos territórios" seria paradoxal. A começar pelo simples fato de que o próprio conceito de sociedade implica, de qualquer modo, sua espacialização ou, num sentido mas restrito, sua territorialização. Sociedade e espaço social são dimensões gêmeas" (Haesbaert 2004a: 20) "Assim, afirmamos que, "mais do que a desterritorialização desenraizadora, manifesta-se um processo de reterritorialização espacialmente descontínuo e extremamente complexo" (Haesbaert 2004a: 214)[24].

In the next chapter, the research question and the central objectives of this research will be introduced. Subsequently in Chapter 3, two conceptual propositions will be addressed in order to put forward some general explanations about spatio-temporal restructuration: i) moving apart from "absolute" time and space, and ii) moving beyond a de-temporalized and de-territorialized social explanation. Both propositions become a leitmotif of the section and will be analyzed in direct relation to four authors: Norbert Elias, Neil Smith, Rogério Haesbaert and Yi-Fu Tuan. At the end of Chapter 3, two warnings and seven orientations for the research in time-space restructuration will be proposed as a central concern for the research in an interdisciplinary context.

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[24] Enacting a de-territorialization" absolute "or the" end of territory" would be paradoxical. Starting with the simple fact that the very concept of society always implies in any way, their spatial distribution or in a narrower sense, its territorialization. Society and social space are twin dimensions" (Haesbaert 2004a: 20). "Thus, we affirm that, more than an uprooted de-territorialization, what is manifested is a particular process of re-territorialization spatially discontinuous and extremely complex. (Haesbaert 2004a: 214). Translation by the author.

Chapter Two: Research Question and Objectives

Chapter Overview

This research project is devoted to the analysis of time and space in modernity. As the central argument states that both categories have not only naturally change in the past five centuries but they have also been restructured by social forces in a very intensive fashion, especially in the past 50 years. These observations raise the following questions: Can a restructuration of time and space overcome the traditional restrictions on social action exerted by both categories? Moreover, is it plausible that social action acquires the capacity to selectively organize time and space; and in so doing, temporal and spatial structures would be created with a tendency toward temporal desynchronization and spatial disintegration?

In metaphorical terms, it would seem the temporality of life *drifts* in the same way that spatiality of experience *blows* without coherent logic to regain their orientation. For the great majority of the world population, this becomes an inexhaustible source of anguish, because time and space cannot be considered merely as containers for social actions. On the contrary, they are socially produced in forms that we are barely possible to foresee or understand, and it is very difficult to assimilate them into simple everyday life experience.

From the argumentation above, a very interesting condition of the researched phenomenon can be derived. The common understanding of time and space has historically hidden its efficacy to organize social life. But what does this statement mean, exactly? If we are allowed to use the concept of modernity provisionally as a description of a historical period, it is possible to see that during modernity the notion of time and space as absolute categories has clouded the extensive spatio-temporal re-articulation that has been ongoing. This was especially the case during colonization processes, which is the basis of the expansion of modern representation. The anthropological revision of the Spanish colonial epoch in Latin America describes this period as extremely chaotic in the spatio-temporal dimension.

In a similar fashion, it is possible to argue that discourses regarding the end of history or the banality of geography occupy the same ideological position in an advanced modernity. In the past 30 years approximately, this narrative has only hidden the extreme efficacy in which social groups or social systems are capable of controlling the production of time and space. Therefore, the pervasive character of the current wave of spatio-temporal restructuration remains unseen in the discourses of de-territorialization or changing temporalities.

If time and space are no longer considered as social restrictions, they have been socially re-articulated in a manner that is not disruptive to specific social actions. But this previous situation does not imply that the relational character of time and space can be so easily blurred. Whenever space is compressed, it is simultaneously extended; whenever time is synchronized in a certain way, it is desynchronized. This situation can be proved socially, politically or even environmentally. Throughout this dissertation, political and ecological analyses of time-space restructuration will be engaged as part of the empirical case study.

<center>**2.1.- Research Question**</center>

The research question can be very broadly presented as follows: How should one approach the study of modernity as spatio-temporal restructuration? On the basis of this starting point, it appears acceptable to make a detour through theoretical approaches, with provisional questions and opening arguments, because time-space re-articulation as an explanatory principle lacks a systematic footing in social sciences.

Modernity has generally been approached as the social or cultural transformation of society inside stable spatio-temporal frameworks. For example, Charles Taylor (1995), using the cultural variable as a defining element, stated that when we compare the modern Western society with another society at a different time, e.g. medieval Europe, or in a different space, e.g. ancient Asian societies, then we have a cultural theory of modernity. By contrast, when we compare modern society as a natural development of traditional societies in a sort of replacement of the latter by the former, then we have an acultural perspective of modernity. In either case, the representation – cultural or acultural – proposes an understanding of modernity as societal changes deployed over time and space. This conceptualization has been very pervasive in social science and proposes a spatio-temporal periodization; in other words, a spatio-temporal container in which society acquires meaning – being modernity the central reference.

In a different vein, Peter Wagner proposes an understanding of the ambiguity of modernity by using the notions of freedom and discipline. He maintains that a historical analysis allows an examination of the different social configurations that modernity takes on over time. These social configurations are spatio-temporally defined and are sensible to the emergence of the social institution, and simultaneously function as both the enablement of and a constraint on social action. Up to this point, Wagner's conceptualization does not differ much from the idea of a spatio-temporal container to define different configurations of modernity. Nevertheless, the German sociologist adds a very interesting element to portray the constitutive stress of modernity. A spatio-temporal tension exists between the wide spatio-temporal

extension of modern social institutions and the individual human life, placed locally and always inside a chain of interactions (Wagner 1994: x-xv).

By considering these two theoretical perspectives, it is possible to advance the following claim: *To understand modernity as a spatio-temporal restructuration is not self-evident but is not impossible*. Modernity for social sciences generally appears as a spatio-temporal periodization; in other words, a container inside the history of humankind. In this container, social actions and social institution are deployed. This very simple representation is usually found acceptable, through common sense and in the accounts of several scholars. To defend an alternative interpretation of modernity as a spatio-temporal restructuration means to counteract the very low influences given to the social construction of time and space in social sciences' accounts of modernity.

Using the language of methodology, the research question presented at the beginning of this section becomes difficult because time-space restructuration could be seen as both independent-explicative and dependent-explained variables. From one side, we could see that modernity emerges as the product of a general change in the spatio-temporal structure. From the other side, the deployment of modernity has constantly produced new spatio-temporal regimes and arrangements. Considering the complex condition of the research question, every step forward in the investigation requires renewed attention.

In summary, my aim is to restore an awareness of social processes, which not only controls the appropriation of time and space in modernity, and to engage the issues raised by the social production of both categories, found in contemporary theoretical reflections.

In the empirical work, the central question is: How does modernization in environmental institutions reorganize time and space? Or in another formulation, how does the re-articulation of time and space become a fundamental piece within ecological modernization?

For the case of the environmental issues, the question for spatio-temporal restructuration appears to be clearer. For example, Maarten Hajer (1995), while

introducing his notion of *environmental emblems* to socially perform the ecological crisis, emphasizes the shift from a direct spatio-temporal experience of, for example, contamination by waste materials to a temporal slow motion and a spatially dislocated idea of environmental damages, as in the case of acid rain. What appears relevant in this example is that the author is not taking any spatio-temporal frameworks *for granted*. The direct experience, a face-to-face spatio-temporality, is not the only possible articulation of time and space in environmental issues. Slowly formed and widely spread spatio-temporalities are required to realistically address the effects of new forms of society-nature relationship.

In a similar fashion, the work of the Mexican scholar Enrique Leff offers a perspective that could be re-appropriated under the notion of spatio-temporal restructuration. When he discusses the new subjectivity inside environmentalism, he criticizes the modern construction of subject or agency. In his words (Leff and Elizalde 2011), modern science has created both the objectification to approach nature and the methodological individualism to approach society. In this context, the society-nature relationship has been colonized by the spatio-temporality of the single individual seeking a profit. In this sense, a novel environmentalist standpoint must overcome the spatio-temporal boundaries drawn by the single experience.

2.2.- General Objective

1. To present modernity as spatio-temporal restructuration and the analysis of the ecological modernization in Chile as a paradigmatic case of selective temporal synchronization-desynchronization and spatial articulation-disarticulation.

2.3.- Specific Objectives

1. To set the argumentative basis to understand modernity and capitalism as spatio-temporal restructuration

2. To propose the theoretical categories and the analytical principles that allow the analysis of modernity as spatio-temporal restructuration

3. To reconstruct the macro- and micro-perspectives in the spatio-temporal restructuration

4. To explain the transformation in environmental regulation as a process of modernization in the society-nature relationship at the national level

5. To analyze the transformation in the official discourse, as well as the social struggle about the ecological crisis in the framework of Chilean ecological modernization (1990–2010)

6. To approach the analysis of the environmental law as a discursive dispositive that restructures spatio-temporalities within the society-nature relationship, and thus, to reorganize the understanding as well as the practices at both the individual and the social levels.

Chapter Three: Theory I
The Question of Spatio-Temporal Restructuration in Modernity

Chapter Overview

This chapter will use a number of theoretical references to advance the description of modernity as a spatio-temporal re-articulation. Modernity as the most relevant form of social change is conceptualized through this thesis as only being possible in its primary capacity as a reorganization of the most basic dimensions of time and space. However, contrary to this view, modernity in the social sciences has consistently been conceptualized as two opposing perspectives that paradoxically diminish the importance of spatio-temporal restructuration, namely i) the notion of absolute time and space, and ii) the de-temporalized and de-territorialized social explanation.

The theoretical approach to modernity as a spatio-temporal restructuration found early expression in the work of Durkheim's sociological *dynasty* known as *"L'Année Sociologique,"* which refers to the journal published by this group of scholars from 1898 onward. Chapter 3 briefly introduces this reflection with reference to the work of Marcel Mauss. Time-space re-articulation is then presented by means of two analytical routes: i) moving away from time and space as absolute categories with reference to the work of the German-British sociologist Norbert Elias and the American geographer Neil Smith; and ii) moving beyond a de-temporalized and de-territorialized social explanation, with reference to the work of Brazilian geographer Rogério Haesbaert and the Chinese-American geographer Yi-Fu Tuan. Finally, some provisional conclusions about and reflections on method are offered.

3.1.- The Role of Time and Space in the Sociological Account

"Une sociologie qui est à la fois une histoire des idées, des méthodes et des théories générales, une analyse des systèmes sociaux et une réflexion sur les origines de la raison à partir des notions de classe, de genre, de temps ou encore d'espace."
Marcel Mauss in Jean-François Bert (2012)

With the previous statement, Jean-François Bert (2012) describes the sociological project presented by Marcel Mauss in his inaugural conference to the college of France on the 23rd of February, 1931. In the preceding years, Mauss had published his approach to what he calls a general sociology in *L'Année Sociologique* under the title "Divisions et proportions des divisions de la sociologie." During the inaugural speech Mauss, briefly refers to this work but did not fully explain it.

In his work of 1924, Marcel Mauss was concerned with organizing the different parts of sociology, and accordingly, he proposes as alternative division for the nascent discipline the one that was used by *L'Année Sociologique*. It is inside what he describes as a *general sociology* where the question for the "histoire des idées, des méthodes et des théories générales" (Mauss 1924) would be placed. Here, a special place would be set out for the sociological question as to the origins of reason. An inquiry that is constantly raised by Durkheim's sociological school is the following[25]:

"Il est de mode maintenant, grâce à nous autres, d'interroger la sociologie sur les origines de la raison, les formes primitives de la pensée, etc." (Mauss 1924: 9)

It is inside this theoretical project that the search for the origins of the reason in social as well as philosophical categories acquires central relevance. This could be considered an extension of the Kantian philosophical project, attempting to describe the condition of possibility (Bedingungen der Möglichkeit) of the reason. Nevertheless, this reference remains subtle in the text until the French author introduces the idea of a "*pure sociology*" in direct connection with the German

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[25] As will be seen in Chapter 5, there are at least two philosophical routes to engage the question for the status of time and space and their transformation in modernity. The one is the neo-Kantian school, which is very well represented by the Durkheim tradition. The other is the phenomenological tradition organized around Husserl and very explicitly in the work of Benno Werlen. The former describes time and space as stable categories inside a socio-cultural universe but changeable among different socio-cultural universes; the latter uses the notion of life-world to engage the motivation for action and the concomitant "regionalization" of space.

philosopher. From this moment on, the question of the "*way of thinking*" of primitive groups, as well as of contemporary ones, becomes a central concern in the sociology and anthropology that Mauss (1924: 10) proposes. Inside this movement, the inquiry about time and space attains a novel status.

"Enfin un pareil plan pose les problèmes en termes de sociologie pure, c'est-à-dire: en termes de nombre, d'espace et de temps, en termes de nature des idées et des actions, enfin et surtout en termes de rapports, de fonctions. Ce faisant, il rend plus claire la nature de la sociologie, plus fine et plus limité son domaine." (Mauss 1924: 32)

Looking into Mauss's great contribution to *L'Année Sociologique[26]*, it becomes possible to state that a first way in which sociology engages the study of time and space is by considering both as constitutive elements of reason. The origins of this reflection are at the same time in the philosophical tradition and the anthropological approach. Time and space appear at the root of any rational knowledge, as Kant proposes in the "Critique to the Pure Reason" (Kant 1922 [1955]). Nevertheless, time and space are not constant among different social groups: They change in the different socio-cultural contexts, as the ethnographer would know. From this perspective, spatio-temporal structuration in Mauss's theoretical project could not properly be considered as a central component of his sociological reflection. On the contrary, it is the social construction of reason and what we may call the rationalization process, both thogether are the main elements explained in Mauss's sociology. In other words, time and space have been considered from inside a sociology of knowledge and not a theory of modernity that considers spatio-temporal restructuration as an engine for social change.

Following the work of Kando (1976: 165), it can be argued that for the group of *L'Année Sociologique,* every kind of knowledge – knowledge, beliefs, and form of classification – is a reflection of the social organization. Time and space are central categories organized by society. In other words, the social organization acts selectively over time and space. Nevertheless, for the French school of sociology

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[26] According to Kando (1976), between the founding of the journal until Durkheim's death in 1917, Marcel Mauss published 11% of the articles, and between 1917 and 1934 he published on average one out of every two.

founded by Durkheim, time and space alone are not the motors of social differentiation. Both categories therefore remain secondary elements of the sociological explanation.

However, once time and space appear as elements in the construction of social knowledge, proving their capacity to influence social organization independent of the knowledge mediation requires only a matter of time. That is the intention of this chapter: to observe how time and space become central elements in the sociological explanation. This section proposes the following approach to observe two different movements: i) getting away from time and space as absolute categories, and ii) moving beyond de-temporalized and de-territorialized social explanations.

If we agree on the existence of transformation in the categories of time and space, it becomes necessary to go carefully through the description of how this transformation connects both categories. The question that arises is whether the transformations in the structures of time and space run together, in parallel or in opposition to each other. Now, if we agree on the existence of some connections between the changes in both categories, we will immediately face the challenge of having to explain the running motor of this transformation: Does time provoke the transformation in space or space is acting over time? At present, there is no satisfactory answer to this question, which is the reason why a parallel analysis of spatio-temporal structures is always proposed during the argumentation.

With the last question in mind, it is relevant to offer an initial hypothesis. In the complexity that involves disentangling the primacy of time or space as a running motor in the transformation of modernity, lies the reason why many of the so-called temporal studies tend to isolate the analysis of time while keeping stable the territorial variable. Meanwhile, geographical studies research the transformation in space in an extremely stable and long time span. From the thesis perspective, these methodological approaches are changing because of the need to boost the social analysis and, more generally, to make a more realistic account[27] of processes that I

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[27] The previous sentence could be interpreted by the reader as a claim for a sort of *"realistic turn"* in human geography. A proposal like this would be excessive at this moment of the thesis, but it would not be false. Social processes of selective de-synchronization and resynchronization as well as

will provisionally call de-synchronization / resynchronization and fragmentation / integration. All of these processes are running in very accelerated temporalities and ephemeral geographies[28].

In the following section, the time-space restructuration is preliminary proposed as moving away from the notion of absolute time and space, especially with reference to the work of Norbert Elias and Neil Smith in the 1980s. Subsequently, the de-temporalized and de-territorialized social sciences explanations are overcome with principal reference the Brazilian geographer Rogério Haesbaert and the Chinese-American geographer Yi-Fu Tuan.

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fragmentation and integration challenge the pre-existing categories in which the spatio-temporal frameworks are being performed. In other words, the "*liquidity*" of time and space calls for a more meticulous account of the social action that lies at its bases. In this sense, a realistic turn toward the spatio-temporal regimes of construction and maintenance is proposed as the right way to engage the social sciences research.

[28] A theoretical project of this kind can be found in the reflection made by Neil Brenner about the limits on the research of State rescaling (Brenner 2009) and, in particular, his discussion about the limits of periodization.

3.2.- Spatio-Temporal Re-Articulation; Moving Away from Absolute Time and Space

If we want to propose an understanding of modernity as a particular form of spatio-temporal re-articulation, we need to move away from an understanding of time and space as the absolute categories in which things and experiences simply occur. This very obstinate way to introduce the spatio-temporal analysis does not seek to discard from the outset the philosophical notion of time and space as *the a priori categories* that organize the experience, which is a proposal primarily attributed to Immanuel Kant. On the contrary, the question to address is the following: To what extent is this philosophical standpoint still relevant as a perspective to organize social inquiry? From this perspective, the problem with the philosophical notions of absolute time and space do not rely on their strong ability to organize social reality, because they actually do that. Quite the opposite: The conflictive element for the argumentation rests in their representation as totally *a priori*, which means universal conditions outside of the influence of history and social struggle.

"Time and space are, therefore, two sources of knowledge, from which, a priori, various synthetical cognitions can be drawn. Suppose, then, that space and time are in themselves objective, and conditions of the possibility of objects as things in themselves." (Kant 1922 [1955]: 63-68)

From every perspective, space and time are central categories to understand, represent and perform social reality; they are the centerpiece of social action and social institutions thanks to their double movements of creation and imposition. But it is precisely because of their extraordinary relevance that they would always be under constant social dispute and lead to constant tension and change. Reformulating the old sentence of Foucault concerning language, it is possible to make the argument that space and time "are not where and when we struggle, they are what we fight for, they are the power we seek to own."[29]

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[29] The sentence of Foucault states: "[L'] histoire ne cesse de nous l'enseigner – le discours n'est pas simplement ce qui traduit les luttes ou les systèmes de domination, mais ce pour quoi, ce par quoi on lutte, le pouvoir dont on cherche à s'emparer" (Foucault 1971 [1973]).

In short, my claim is not to reject the centrality of time and space but to abandon their *absolute* status as universal preconditions outside social dispute and alteration, at least within the sphere of sociological analysis. As a result, an important challenge appears for the argumentation: How, without totally rejecting the philosophical status of time and space, brilliantly expressed by Kant as an *a priori* for the experience and in this sense the *condition of possibility* of every phenomenon, is it still possible to embrace a social constructivist perspective? Here, the claim would be similar to the intention formulated by the Durkheimian school of social sciences, which when Durkheim founded the journal *L'Année Sociologique* at the end of the 19th century sought to spread its new paradigm of analysis across Europe.

This French school of thought, in particular, devotes a great deal of attention to researching the status of the so-called philosophical categories. Space and time play a central role in social configuration, and they should be reinterpreted from the perspective of being a social construction (a posteriori) but functioning as an absolute condition inside a particular cultural universe (a priori). In his introduction to Marcel Mauss's "Essai sur le don forme et raison de l'échange dans les sociétés archaïques," Spanish author Fernando Giobellina Brumana explains this argument very well.

"[…] Se dedicaron así a desbrozar aquellas nociones que prenunciaban la idea de "causa", las de "tiempo" y "espacio", la noción de "todo", la de "sustancia", la de "género", la de "yo". La perspectiva que orientaba estos trabajos era la respuesta a un problema filosófico clásico, el origen de las categorías. La gente de L'Année Sociologique, involucrada en la polémica dado que casi todos sus miembros eran filósofos profesionales, pretendía superar una oposición entre las dos respuestas clásicas: por un lado, la del apriorismo, que supone que son anteriores a toda experiencia, eternas e inamovibles; por el otro, la del empirismo, que postula que provienen de la experiencia y, por lo tanto, son relativas y mutables. Las categorías, ésta era su revolucionaria propuesta, son al mismo tiempo absolutas y mutables, constructos sociales e históricos –por lo tanto variables– que se presentan a los miembros de cada cultura como incuestionables –por lo tanto absolutas–. La cuestión trascendía la esfera filosófica; en plena ortodoxia, este mundo de ideas, de

representaciones colectivas, era la base misma de la sociedad, el esqueleto que permitía su existencia" (Giobellina in Mauss 2009: 18)[30].

In the following paragraphs, I will illustrate from two different theoretical perspectives how engaging the re-articulation of time and space as research horizon implies, in both cases, a break with the Kantian standpoint of *absolute categories* and the embracing of a social constructive orientation. Here, the examples run through the works "Uneven Development" by Neil Smith and "Time: an Essay" by Norbert Elias. It is interesting to note that both books are dated the same year, 1982, while the book is the beginning of a short but fruitful academic career for Smith, it represents one of Elias's last publications. Elias's work compiles different texts originally written in English, with a few written specially for this compilation, for example the prologue, which was written in his mother language, German. Smith's Uneven Development was the result of his doctoral dissertation at Johns Hopkins University under the direction of David Harvey and would become one of his most influential works.

The context of the two works, as well as the analytical projects engaged in by their authors, is by no means comparable; nevertheless, for the needs of this thesis, they represent two approaches to observe the basis in the social sciences for the construction of time and space, respectively. The reflection on time in Elias' work criticizes the notion of *absolute time* – be it objective or subjective – because time loses any reference to its consolidation in an intergenerational endeavor, a collective learning process in the very long run. This characteristic is one of the central features in his evolutionary sociology. In turn, Smith rejects the notion of *absolute space*, because it condemns social action to be *allocated* or simply *placed*, therefore misleading its central capability to spatialize. For Smith, space restructuration is not a

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[30] They have been devoted to clearing those notions that express the idea of "cause", of "time", of "space", the notion of "everything", that of "substance", the one of "gender", the one of "I ". The perspective that guided this work was the answer to a classic philosophical problem, the origin of the categories. The members of L'Année Sociologique, were involved in this controversy since almost all were professional philosophers, seeking to overcome the opposition between the two classical responses: first, on one hand, that of priorism which signifies that those categories predate all experience, therefore eternal and immovable; on the other hand, that of empiricism, which postulates that categories come from experience and, therefore, are relative and mutable. The categories (and this was their revolutionary proposal), are both absolute and mutable, social and historical constructs - therefore variables- appearing to the members of each culture as unquestionable -therefore absolute. The issue transcended the philosophical sphere, in full orthodoxy, this world of ideas, collective representations; it was the very foundation of society, the skeleton that allowed its existence (Giobellina en Mauss 2009: 18). Translation by the aiuthor.

contingent phenomenon but an orchestrated logic inside the Marxist theory of capitalism.

Smith departs from an observation that is closely related to the original concern of this section when he states: "For one can hardly look at the world today without perceiving that, at the hands of capital, the last two decades have witnessed an emergent restructuring of geographical space more dramatic than any before" (Smith 2008 [1984]: 1). The author would explain his project as follows: "At the most basic level, the object of this work is to unravel the theoretical logic driving this restructuring of geographical space," and being even clearer in his Marxist roots, he asks: "What is the geography of capitalism? What specific spatial patterns and processes characterize capital society, and how do they change the further development of capitalism?" (Smith 2008: xii)

In his analysis, Smith criticized what he calls the "neo-Kantian historicism," because this philosophical perspective loses the unitary condition of space restructuring in capitalism. If the phenomenon of spatial restructuration appears to be self-governed, then the possibility of proposing a unified logic is restricted.

"According to this tradition, therefore, the restructuring of space makes no sense except as the product of the most universal physical forces and laws: Human activity does not restructure space, it simply arranges objects in space. Viewed through this set of philosophical lenses the symptoms of spatial restructuring appears as just so many separate processes at separate scales with very separate causes and explanations" (Smith 2008: xi).

Norbert Elias would engage the question of time in his project of an epistemology that becomes closer to human knowledge and its social evolution. "Zu diesem Bemühen bietet der folgende Text einen Beitrag. Menschliches Wissen, das ist die Vorstellung, die ihm zugrunde liegt, ist das Ergebnis des langen, anfangslosen Lernprozesses der Menschheit. Jeder einzelne Mensch, wie groß sein innovatorischer Beitrag auch sein mag, baut auf einem schon vorhandenen Wissensschatz auf und setzt ihn fort. Mit dem Wissen von der Zeit verhält es sich nicht anders" (Elias 1984: xi).

The next quotation from Elias clearly expresses one form of sociological criticism to the philosophical theorization of time and space. It is important at this point to be reminded of the disappointment with the neo-Kantian perspective expressed by Elias in his early academic career[31]. An important episode in this regard was the dispute he had with his doctoral supervisor Richard Hönigswald, one of the most renowned neo-Kantian thinkers at that time.

Wie sehr das Unvermögen, die sozialen Orientierungs- und Regulierungsfunktionen der Zeit in Betracht zu ziehen, zu den Schwierigkeiten beitrug, die Menschen bei dem Bemühen um eine konsensfähige Theorie der Zeit zu schaffen machten, zeigt sich besonders auch an den herkömmlichen philosophischen Lösungsversuchen des Problems. Im Mittelpunkt der langen philosophischen Diskussion über die Natur der Zeit standen - und stehen vielleicht noch immer zwei polar entgegengesetzte Positionen. Man begegnet im Rahmen dieser Diskussionen auf der einen Seite der Vorstellung, daß es sich bei der Zeit um eine objektive Gegebenheit der natürlichen Schöpfung handle. Ihrer Seinsart nach, so schien es den Vertretern dieser Anschauung, unterschied sich die Zeit nicht von anderen Naturobjekten, abgesehen davon, daß sie nun eben nicht wahrnehmbar war. Newton war vielleicht der prominenteste Vertreter dieser objektivistischen Vorstellung, die in der neueren Zeit schon früh ins Hintertreffen geriet. Im entgegengesetzten Lager herrschte die Vorstellung vor, die Zeit sei eine Art des Zusammensehens von Ereignissen, die auf der Eigentümlichkeit des menschlichen Bewußtseins oder, je nachdem, auch des menschlichen Geistes, der menschlichen Vernunft beruhe und die dementsprechend jeglicher menschlicher Erfahrung als deren Bedingung vorausgehe. Bereits Descartes neigte dieser Vorstellung zu. Sie fand ihren maßgeblichsten Ausdruck in der Philosophie von Kant, der Zeit und Raum als Repräsentanten einer Synthese a priori ansah. In weniger systematischer Form hat diese Auffassung, wie es scheint, über die gegnerische weithin die Oberhand gewonnen. Sie besagt, in schlichterer Sprache, ganz einfach, daß die Zeit eine Art von angeborener Erlebnisform ist, also eine unabänderliche Gegebenheit der Menschennatur.

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[31] See Norbert Elias foundation; http://www.norberteliasfoundation.nl/elias/index.php

Die beiden polar entgegengesetzten Zeittheorien haben, wie man sieht, einige Grundannahmen miteinander gemein. In beiden Fällen stellt sich die Zeit als eine Naturgegebenheit dar, nur eben in dem einen Falle als eine »objektive«, unabhängig von allen Menschen existierende Gegebenheit und im anderen Falle als eine bloß »subjektive«, in der Natur des Menschen angelegte Vorstellung. In dieser Konfrontation einer subjektivistischen und einer objektivistischen Theorie der Zeit spiegelt sich eine der Grundeigentümlichkeiten der traditionellen philosophischen Erkenntnistheorie. Als selbstverständlich wird unterstellt, daß es einen universellen, sich ständig wiederholenden Ausgangspunkt, eine Art von Anfang des Erkennens gibt. Ein einzelner Mensch, so erscheint es, tritt ganz für sich allein vor die Welt hin, das Subjekt vor die Objekte, und beginnt zu erkennen. Die Frage ist dann nur, ob bei der Bildung menschlicher Vorstellungen, wie der von der Einbettung aller Ereignisse in den Strom der Zeit, die Natur des Subjekts oder die der Objekte den Vorrang habe (Elias 1984: x-xi)

In the previous quotation Elias makes clear his concern about the two orientations – objective and subjective – that dominates the theorization about time. In both cases, the problems is consider time as a given reality and not as the result of a human learning process, which in words of Elias "know not begining" (Elias 1989 [1984]: 14)[32].

In the light of the description made by these two authors, it becomes possible to highlight some central concerns that remain at the root of their critique of a neo-Kantian approach. On the basis of their theoretical support, it will be easier to confront the task of describing modernity as socio-spatial restructuration. Smith presents his criticism of *absolute space* as a question of *unity* and *logic*. If the social sciences approach space as something that is merely a given, restructuration as a phenomenon is no more than a contingent situation, *a haphazard event*. Nevertheless, Smith's project will claim in the Marxist approach the possibility to observe the unitary condition of the widespread wave of geographical restructuration. Two thoughts are crucial to understanding this project: "The uneven development of capitalism is structural rather than statistical. The resulting geographical patterns are

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[32] Translation by the author form the Spanish version of the book.

thoroughly determinate […] and are thus unique to capitalism" (Smith 2008: 4), and "Uneven development is both the product and the geographical premise of capitalist development" (Smith 2008: 206). The first quotation highlights the relevance of the capitalist logic driving the process of spatial restructuration. The tendency toward uneven development is not contingent; rather, it is unavoidable. The second quotation points to the dialectic character of spatial restructuration in capitalism. Uneven development is the product and the premise of territorial restructuration under capitalism.

In Elias's case, the criticism of the philosophical approach to time in the tradition opened by Descartes and Kant can be summarized in the inquiry for both the unitary condition and the social character of human knowledge. If the analysis of time adopts the individual as a starting point and subsequently repeats this operation, the evolutionary and regulatory character of social knowledge and symbols becomes totally irrelevant. But this is not the case: Elias clearly intends to restore time as a symbolic synthesis, which allows the relation between different positions inside "the succession of physical phenomenon, the befalling of social events and the individual life" (Elias 1989 [1984]: 25)[33]. The temporal restructuration means to expand the interpretation of time merely as a given condition.

Truly engaging spatio-temporal restructuration as a point of departure in this research means to break from the notions of *absolute time* and *space.* The first task is to submit the question for the unitary condition in the restructuring process, which should refer to the oneness for social analysis between the physical world, society and the individual. The second task is the search for a driving logic of restructuring processes, which implies not only an approach to the intersubjectivite condition of time and space, but a recognition of the dialectic character and the historical embeddedness of the new spatio-temporal regimes.

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[33] Original text in Spanish: "[…] la sucesión de fenómenos físicos naturales, del acontecer social y de la vida individual" (Elias 1989 [1984]: 25) Translation by the author.

3.3.- Spatio-Temporal Re-Articulation; Moving Beyond a De-temporalized and De-territorialized Social Explanation

Whenever we want to engage the study of modernity as a particular form of spatio-temporal re-articulation, it is necessary to overcome de-temporalized and de-territorialized social explanation: the false belief in social events occurring independently of the spatio-temporal context and its organization. This belief may also be phrased more dramatically as the faith that advanced societies are no longer structured and restricted by time and space. In other words, the performance of a social configuration in which history and geography are exhausted in their explanatory characters, because contemporary social action increasingly transgresses time and space boundaries.

De-temporalized and de-territorialized approaches fall short in accounting for the integral character of social transformations in late-modernity, in other words, to re-temporalize and re-territorialize social analysis is a first step to advance in a sensible research of contemporary social phenomena. A limited vision of modern development – one that emphasizes de-territorialization or de-temporalization – is generally associated with a very deluded assessment of technological improvements, and the false social-universal assimilation and distribution of them. In an attempt to build up a solid approach, it becomes central to confront a central problem of what could be considered the *sociological imagination[34]*. Strictly speaking, the sociological discussion accepts the challenge to talk about de-territorialization as a plausible phenomenon, but the same is not true of de-temporalization.

Owing to improvements in transportation and telecommunication, the notion of de-territorialization is conceptualized as the lost of relevance space in social analysis, because action is no longer restricted to any singular place. In this sense, nobody would even imagine or propose to remove the space of our imagination-representation. Without space, a sort of black background would appear, in which society would simply float around, and the objects would no longer have the characteristic three dimensions. But when somebody proposes something like de-temporalization, the time quickly comes out of our pictorial imagination and like it is

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[34] Here, the notion of sociological imagination is used as proposed by Charles W. Mills (1959).

performed in hundreds of movies and films, we see a world where no movement and aging exists, the objects remain inanimate but are still there, in front of us. Thus, my argument proposes that even if it sounds paradoxical, while the imagining of de-territorialization is less plausible than de-temporalization, the sociological account is more willing to examine the losing relevance of space than seriously discuss something like the losing relevance of time in social explanation. But why does this happen?

The answer lies in the profound role the concept of *process* plays in the social sciences. Process is simply unthinkable without time but still arguable without space, as many authors may propose, but this situation is the result of a misleading sociological imagination. No kind of process could make an equal abstraction of time and space, even if, for our common or even scientific narratives, the central issue in *events concatenation* highlighted the time dimension while hiding the spatial dimension. From this point, two propositions arise: i) the sociological imagination as a devise is more prone to thinking about de-territorialization but may not agree to confront de-temporalization in the same way, and ii) the systematic study of the spatio-temporal restructuration can confront de-territorialization as a misleading representation but ought to reconstruct what a process of de-temporalization could mean, because the last notion has been more trickily expressed in the social sciences.

As proposed elsewhere, de-territorialization is the losing localized character of social action, institutions and systems. The correct metaphor is not "losing the scenario" where social actors play and social action occurs. On the contrary, de-territtorialization is considering that the social action, whatever kind under analysis, it happens here, there or over there, without radically changing its causes, content, and consequences. In other words, what happened here could happen in another place with certain independence of the context, and with similar results.

Given that the temporal dimension is manifested in a different way than the spatial one, it becomes necessary to find a theoretical category that could play the role that the notion of localization has in the territory for time. This notion is the *sequence*, and it is expressed by the sequential character of social action. De-temporalization would be a kind of breaking connection with the specificity of the moment. To draw a

parallel with the abovementioned formulation for space, it is possible to state that social action could occur either now, before or after, without profound changes to its causes, content and consequences.

To overcome the de-territorialized and de-temporalized explanation means to reset the value of *here and now* in social analysis, but at the same time, it means not taking for granted only the spatio-temporality of the *present here and now* as the only possible one. The consequences of this approach will be made clear in the works of two authors who fight against the paper giant of history and geography twilight: Haesbaert, the Brazilian human geographer with his studies against the de-territorialization and the proposal of multi-territories, and Yi-Fu Tuan, the Chinese-American geographer and his experiential approach to space, time and place.

Haesbaert introduces his work, "The Myth of De-territorialization" by talking about his own experience as a child in the south Brazilian countryside: "tendo vivido na zona rural até o início de escolar primária, comecei por conhecer a territorialização mas rígida (e dura) da vida no campo." (Haesbaert 2004a: 13)[35]. Reflecting on the words of the author, it is possible to think that territory hardly appears more clearly as a social restriction than when it is applied over the same human body. In this context, the human body is the only possible way of interaction between the person and the territory. When one misses the last bus in the countryside, it is not a matter of waiting for the next one to come, or simply paying for a cab. Missing the bus in the countryside is by in every way the beginning of an adventure, which may last five hours if it means walking 20 kilometers – a typical distance between towns – in the case of a young adult, or much longer in the case of an elderly person.

From this rigid facet of the threefold relation between individual, space and social mediation, the construction of the self becomes aware of space with *fascination* and *fear*. Space becomes a source of freedom in the same way as forms of imprisonment, and Haesbaert sensibly expresses these conditions in the following excerpt: "O trem amedrontava e seduzia ao mesmo tempo. Ali, ao longo da ferrovia, acho que comecei

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[35] "Having lived in the countryside until the beginning of primary school, I began to know the most rigid territorialization (and hard) of the Country Life." (Haesbaert 2004a: 13). Translation by the author.

a viver este paradoxo entre temor e atração pela mudança, pela mobilidade, pela des-territorialização (sempre dialetizada). Meu maior sonho era um dia "pegar" o trem." (Haesbaert 2004a: 13)[36]. From this reflection, we can get a feeling for the complexity involved in the human and social relation with space and simultaneously discover a rich platform from which to address the issue of power inside the reflection on territory.

The subject of power has been a central concern for geopolitical reflection since the production of cartographies was for an extended period of time completely monopolized by the military. Because of that reason, human geography, as a civil and novel discipline, has had to be separate from its physical component and search in another "place" for its future development. This distance is exactly the perspective from which human geography could retrieve the relation between territory and the forms of power. The relation has been a recurrent concern in francophone philosophical reflection and could be approached by making the distinction between property *property* and *appropriation*, in the words of Henri Lefebvre. This distinction proposes the understanding of territory not as property but as constant process of appropriation (Lefebvre 1991). Subsequently, in line with the vision of Claude Raffestin (1980), territory is indeed appropriation, because "it is not a thing" – or an object – but a "resource." In both conceptualizations, the French authors convincingly portray the constant *relational nature* of the social world.

Territory implies action, processes and temporalities, as it turns its focus from *building territory* to *the actors who build it*. From this perspective, not only power appears as a central device to move beyond the de-territorialization, but also as the relational character of exerting power. When something such as de-territorialization exists, it ought to be described as a specific form of appropriation, the submission of the territories, and the implicit social relations between its actors. In other words, emphasizing the processual nature of territory is the central device to fight against the losing relevance of space in social organization. Recovering the centrality of space in social processes means to reclaim its embeddedness in time. Appropriation and

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[36] "The train seduced and frightened at the same time. There, along the railroad, I think I started to live this paradox between fear and attraction for change, for mobility, for de-territorialization (always dialecticalized). My biggest dream was one day to "catch the train""(Haesbaert 2004a: 13). Translation by the author.

submission imply, in words of Lefebvre, "time, rhythm and practices" (Lefebvre 1991), and that de-territorialization is not a reality *per se* but can be conceptualized as a kind of upheaval form of spatial temporalization caused by some particular form of social action.

Thus far, the explanation has been limited to de-territorialization and how to recover the specificity of space in social analysis by using the categories of *power* and *process* as central devices. But in the case of time, what can we plausibly portray as a kind of de-temporalization in social science explanations? To address de-temporalization, I propose to narrow the focus on the overcoming of the sequential nature of time by the overall empire of the instant.

De-temporalization is not a simple concept to explain, even when our task is only to reconfigure its character in order to overcome its shortcomings inside social science explanations. If there is something like an archetypical character of de-temporalization, it is: i) the fantasy of a place without time. I want to illustrate this condition with a film scene where no movement is made by any character or object, with the exception of the protagonist, who stays awake while the others seem to be frozen, e.g. in the UK film *"Cashback"* (Sean Ellis: 2006)[37]; ii) the poetical fantasy to overcome the limits of time and achieve a perspective of total unity where there is no time nor space[38]. This condition is especially connected to the religious idea of passing after death, or life after death, and it is also connected with the philosophical tradition of the *noumenon* in Kant and the absolute mind or spirit in Hegel[39]; and iii) the socio-political conflict produced by a temporal breaking that leads to the polarization of times and the impossibility of reintegration. This situation has been shown by the most awkward representation of globalization proposing how the temporality of every singular social group differs in such a radical way that no reintegration is possible. In all three cases enumerated above, de-temporalization signifies a transgression of the fluid condition of time and its processual character in an all-embracing, instantaneous integration that seems to last forever.

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[37] In Internet http://www.imdb.com/title/tt0460740/

[38] In a similar fashion, the idea of travel in a spaceship faster than the speed of light, along with the help of Einstein's theory of relativity, offers the promise of a time without time – a place beyond time.

[39] Immanuel Kant's "Kritik der reine Vernunft"(1922) and Friederich Hegel's "Phänomenologie des Geistes" (1988).

Despite its factual realization, de-temporalization should be considered in social analysis as a strong imaginary device that has the ability to conduct social actions. From this angle, is it possible to account for its transformative power besides its successful or unsuccessful factual implementation. In other words, de-temporalization is productive in the social world, because it mobilizes actions, and it is precisely at this level where we find an opening to use the notions of *power* and *process* in a critical analysis. But before continuing with the exploration, a brief reflection on the connection between time and space in the construction of de-temporalized realities is in order.

Rogério Haesbaert proposes in his Dos múltiplos territórios á multiterritorialidade (Haesbaert 2004b) an interesting categorization based on ideal-type strategy. He presents a double classification, which divides territories into functional and symbolic ones, crossing them with the type of appropriation and the presence-absence of territory or territorialities. From the four ideal types of territories arising, one is particularly interesting: *the symbolic territoriality without territory,* exemplified by the "promised land for the Jewish people" (Haesbaert 2004b: 4)[40].

The efficient influence deployed by the symbolic space in social life takes central stage here, and it could be extrapolated to the temporal dimension. A territory without territoriality means the social conditions of a territory exist, and they are very much present for the population, even when they lack a real place in which to anchor their social and communitarian practices. From this perspective, de-temporalization and the parallel with the example of the Promised Land could be conceptualized as a temporality without time: in other words, a type of temporal organization that has not been anchored to the material world appears as strong social reference. From this perspective, it is possible to claim that one of the recurring problems of modernity can consequently be expressed as the colonization of the spatio-temporalities that are locally organized by pervasive social imaginaries of inexistent places and times, or inexistent de-territorialized and de-temporalized realities.

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[40] Translation by the author.

The notion of inexistent places and impossible temporalities is a constant in human culture. Religion displays many of these metaphors, in which heaven is portrayed as located in unreachable places. For example, in the skies, for Catholics people when they pray, "Our Father, Who art in heaven"[41], or in a "timeless paradise [...] located myriads of miles from any known human settlements for the Taoist lore" (Tuan 1977: 122).

These inexistent spatio-temporalities in the political realm have a very well-known formulation as utopia, an unreachable island, in Thomas More's description of a perfect society at the beginning of the 16th century (More 1965 [1516]).

All three examples show the condition of de-temporalized places, but it is surprising to notice that the imaginary of de-temporalization has been culturally constructed over a category which is firmly rooted in the integrative character of time and space: distance.

There are good reasons for this, derived from the previous argumentation, to assume that every wave of de-territorialization and de-temporalization is always rooted in the processual nature of the social phenomenon. Even in its symbolic or imaginary conditions, de-temporalization and de-territorialization are both discursively constructed with references to time and space. In both cases, the notion of distance appears as a restriction for action, and it is exactly from this character that the religious narrative obtains its condition as a metaphor.

Yi-Fu Tuan is very explicit in this regard and offers a good explanation for the extensive social use of time to measure space. He maintains that the primacy of unities of time over unities of space to account for distance is owed to the capacity of the former to show a "clear sense of effort" (Tuan 1977: 131). If we consider this claim as valid, it is possible to state that distance represents effort, but at the same time also limitation for action and the possibility to exert domination. Therefore, to overcome the physical condition of restriction exerted by distance, for example by

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[41] The first sentence of the most common Catholic prayer already locates the heaven in a far-off place in the sky.

means of improvements in transportation systems, does not eliminate the role played by social action in overcoming distance.

The social character presented in the attenuation of physical distance means that power could be exerted within it. From another perspective, it could also be argued that the attenuation of the limitation applied by time and space over people is not distributed equally in society. There are still social groups that experience a deceleration of their mobility while others live in constant acceleration. Therefore, alongside the attenuation of distance as restriction, there emerges another possibility to exert power.

Temporalities and territorialities are mutually implicated; they are co-extensive to each other, even if they do not change in a similar fashion or pattern. The construction of every kind of temporal and spatial arrangement, even as de-territorialized or de-temporalized, requires the productive character of social action. Based on this contention, which could be summarized as the coupling character of time-space with social action (Varela 1991), it is possible to emphasize the need to change focus from the inexistent spatio-temporalities to the actors and the action that seek to bring them into reality. In any form that time and space could acquire, either as limitation, definition, restructuration or even production, the analytical perspective of coupling with social actions attempted to describe the situated character of time and space as the product of specific social actions.

Social action reincorporates the processual character of every possible form in which space and time are restructured. The eventual condition of the actions – and therefore, the specific orientation of time and space restructuration – allows a sociological conceptualization in which re-temporalization and re-territorialization gain strength. In this way, de-temporalization and de-territorialization are just forms of upheaval in social organization with pervasive effects, but by no means could they be considered an all-embracing social phenomenon.

3.4.- Warnings and Considerations Regarding the Method

In the discussion presented thus far, I tested the explanatory capability of a provisional and intuitive question: *Are there substantive transformations in our understanding of time and space in late-modernity?* Following that, I intended to offer an explanation for the need to abandon objective space and time and to overcome the de-territorialized and de-temporalized social explanations.

My aim in this discussion was to show the complexity of the field under analysis and how the object of research ought to be grasped by comprehensive thought, as opposed to a lineal thinking. With the result of this explanation in mind, and before starting the core discussion in the theoretical approach, I would like to warn the reader and then to propose a group of seven theses that are a substantial part of my theoretical framework. These warnings are:

1.   It has been a deliberate decision not to define with precision what I understand under concepts such as "spatio-temporal (re-)structuration," "spatio-temporal regimes" and "spatio-temporal arrangement." I have not mentioned the complementarities or the differences of these concepts, and I will continue to maintain this approach in order to build up a theoretical vocabulary that will allow me, in the following sections, to bring different theories into the discussion, some of which are considered to be contradictory in principle. It will only be at that moment, as part of the discussion of particular theories, that the task of defining these terms will be carried out.

2.   It is assumed the reader is familiar with the discussion about various forms of capitalism and with the geographical theorization about their different phases. Capitalism was established, operated and changed in a complex fashion, and it is a mode that includes the transformation of the temporal and the spatial orientation of society. These different phases act in conjunction with the transformation of the institutional arrangement and of the subjective orientation of action. As all these statements cannot be fully proved in this thesis, they would acquire the status of presuppositions, because of the extensive research into them inside the classical

political economy tradition, regulation theory and critical human geography. Such presuppositions are necessary in order to advance the study about the transformation of the spatio-temporal structures in modernity.

I also propose seven theoretical orientations:

1.   The temporal and spatial structures of society have been in a process of constant change in modernity, and one can argue that this is especially the case in late-modernity. In geography, this phenomenon has been studied mainly by the periodization of the spatial arrangement in different phases of capitalism. I will propose that a theoretical frontier for this kind of studies be an analysis of the specific articulation of time in the definition of transitory spatial arrangement. I will claim that in late-modernity, in particular, the permanence of the geographical arrangement – politically and economically – becomes highly unstable and changeable. The reason why it is necessary to incorporate concepts such as acceleration, deceleration, articulation, fragmentation, re-articulation, and disarticulation as interpretative key concepts will be posited here.

2.   The common idea of de-territorialization should be challenged by social theory. I will claim here, in the same way as Smith (2008) and Haesbaert (2004a), that de-territorialization and the intention to metaphorically construct an abstract space, function more like ideologies to support the full integration of the global market beyond and without considering its human consequences. Even if we agree with the concept of "time-space compression" (Harvey, 1990), a homogeneous annihilation of space by time rather seems like the fantasy of modernization and the industrial apogee than something possible if we are awake. The "time-space compression" is always a selective and differential process, and here lies the reason why space has never lost and will never lose its relevance. From a theoretical point of view, all concepts that at first sight dismiss the relevance of space in time, like "spaces of flows" (Castells 1989) and "time-space compression" (Harvey 1990), always come together with conceptualization that recompose their selective geographical reintegration, e.g., "historically specific territorialization" (Brenner 2004), "time-space distanciation" and "spatio-temporal matrices of globalization" (Jessop 2005).

3.   The need to temporalize the processes of transformation in the geographical arrangement comes from an empirical statement. The time spans where particular arrangements were valid are increasingly shortened, and this fact brings evidence to propose a need to incorporate the time and the acceleration not only in the definition of historical spans but into the same process of transformation of geographical arrangement. In other words, it becomes necessary to answer the following questions: Are there specific articulations of time that influence the process of crisis ruptures and an emergence of new geographical regulatory forms? And are there particular articulations of time that operate actively in the creation of momentary arrangement in the very relevant form of "transitory spaces"?

4.   The divergent interpretations that the social sciences have made of the spatial transformation, and the political and economic arrangements that are woven into it, express the traditional struggle for the primacy of the structure or the agent level in the social scientific explanation. In other words, the diverse explanations can also be expressed in terms of a confrontation between a Marxist and a bourgeois sociology. However, even if these interpretative traditions comprise substantive differences in their explanatory endeavors, it is only in their complementation that an opportunity exists for the social sciences (especially sociology, geography and anthropology) to claim primacy in the explanation of the capitalism emergence and continuous transformation. Only the social sciences, understood here as a critical reflection on the human and social consequences of capitalism and modernity, are the ones that can really understand the traumatic effects of the current phenomenon of transformation in our political forms of regulation and because of that, in the articulation of time and space. Thus, this is precisely the reason why it is better to understand the different social forms of interpretation not merely as opposed to tradition; on the contrary, I want to propose a historical reading where they are conceived as interpretative achievements in a continuous process of improving social explanation.

5.   It is the very nature of the territorial transformations expressed in changing geographical arrangements that calls for an integration of different social theories, even in an eclectic fashion. There are certain transformations in the political, economic and social organization of the territory that, when they work together, affect all different social levels: i) the level of the actors, ii) the institutional environment,

iii) the level of the political regulation, and iv) the structures of time and space. The multilevel orientation of these capitalistic enterprises makes the traditional distinctions between a structurally oriented and agent-centered social explanation useless. As I will argue later, these complex capitalist enterprises, particularly in countries and regions with a *rapid entrance* to neo-liberal modes of regulation, act at every level of social reality, and are thus precisely the reason why a multi-explanation approach is required.

6.   It is in the sociological intent to understand big capitalistic enterprises, especially those that are connected to the construction of large infrastructure or mega-projects involving the extraction of raw materials, energy production and urbanization understood as the construction of regional mega-cities, where a dynamic framework of analysis is required. In this context, it becomes necessary to integrate a multi-temporal, multi-spatial approach. If we understood these capitalistic enterprises in a Marxist framework, as the way to fix capital and thereby solve the crisis of capital over-accumulation produced by the constantly accelerated financial market, it is no longer possible to avoid the need to incorporate concepts such as acceleration, desynchronization and selective reintegration in the territorial research.

7.   Last but not least, the transformations in the social reality studied here are not neutral in a normative character. In other words, the study of the temporal and spatial transformation in an advanced capitalism or late-modernity has enormous consequences on the lives of real people, in the prevalence of native populations, and in the maintenance of the natural environment. These consequences have negative effects on the process of democratization of many countries and regions, or even worse, they apparently lead to a process of de-democratization in our political institutions, and the re-emergence of social conflicts. In any case, the transformations studied here should be considered as a historical process or product, in the sense that they are not beyond the social possibilities of control. Their status as current phenomena means it is important to understand them thoroughly. Only this type of knowledge could be actively mobilized in order to oppose its negative implication. This runs counter to the position of social scientists who believe the status of sciences in a discipline is synonymous with an uncommitted attitude in respect to the realities that are being researched. The works of two 20th-century sociologists will be

particularly relevant here, namely that of Pierre Bourdieu (2008), with whose work I would like to restore the idea of committed knowledge, and Louis Wirth, who talks about the responsibility of the social scientist (Bendix 1986)[42].

3.5.- Chapter Three Summary; The Theoretical Origins of Spatio-Temporal Restructuration

Chapter 3 discussed what has been called two opposing perspectives that diminish the role of the time and space restructuration in explanations from the social sciences: i) the notions of absolute time and space, and ii) the perspective of de-temporalized and de-territorialized social experience. These two perspectives can be summarized as follows: "Every phenomenon simply takes place in time and space," and "social phenomena are no longer restricted by time and space," respectively. The failure of both has been proved in this chapter. Spatio-temporal restructuration has been conceptualized as a central feature of modernity, and modernity is only possible through the effects of a very extended and pervasive spatio-temporal restructuration. In the view proposed here, spatio-temporal restructuration becomes both the condition and the result of modernity.

A first sociological attempt to conceptualize the dynamic character of time and space structuration can be found in the sociological project of Marcel Mauss. The French author clearly offers a step away from the philosophical notion of absolute time and space when he proposes asking sociology for the origins of reason. The answer to this inquiry was to propose time and space as stable in a cultural universe but changeable among universes.

The critique of the a priori condition of time and space remained very slight within the field of the social sciences until the last century. For the purpose of sociology, Norbert Elias's evolutionary approach explicitly addresses the question of the status of time in social life. His works reject the idea of time as an objective or subjective creation and proposes an intergenerational emergence. In the sphere of human geography, the work of Neil Smith also addresses the critique of the Kantian notion of

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[42] Bourdieu and Wirth are not only considered as two prominent scholars but also well respected for their strong social commitment.

space by stressing its incapability to address with precision the spatial restructuring process as a consequence of capitalism.

De-territorialized and de-temporalized social explanations were approached by criticisms presented in the work of the human geographers Rogério Haesbaert and Yi-Fu Tuan. The main conclusion of this analysis states that temporalities and spatialities are mutually implicated, and that every spatio-temporal structure, even in the form of de-territorialization or de-temporalization, is required for the productive character of social action. Here, there is a turning point in the sociological analysis, which moves away from the inexistent spatio-temporalities to an analysis that engages both actors and actions seeking to produce those previously "non-existing" spatio-temporalities.

Moving away from the notion of absolute time and space, and beyond de-territorialization or de-temporalization is a central requirement for advancing an explanation of the spatio-temporal restructuration in modernity. Chapter 3 addressed the question of finding ways to consider the dynamic character of the spatio-temporal structures even as we acknowledged that the social sciences, in fact, are not primarily concerned with this issue. The discussion offers one route in which sociological and geographical explanations have used the idea of spatio-temporal restructuration. In contrast with the next two theoretical chapters, the route showed here does not explicitly engage the restructuration dynamics as the object of research. Instead, the discussion is connected with something that could be labeled a sociology of knowledge and not properly speaking spatio-temporal restructuration. By contrast, geographers seem to be concerned with spatial structures and not with accounting for the temporal structuration.

Chapter Four: Theory II
Spatio-Temporal Restructuration from the Macro-Level: Enlarged Spatio-Temporal Frameworks for the Social Sciences Account

Chapter Overview

The social sciences studies are traditionally fixed inside a spatio-temporality that contains actions, institutions, structures, and even cultures. From this perspective, most social researchers do not question the dynamic and mutable character of the spatio-temporal frameworks. Therefore, the stability of time and space often appears as an underlying theoretical assumption. In the past four decades, two perspectives have productively questioned this assumption: i) the neo-Marxist criticism of modernity proposes a sort of space subjugation in contemporary phases of capitalism; and ii) global system analysis, which also has Marxist roots, proposes supranational economic integration that for the first time encompasses the entire world. In both perspectives, capitalism overcomes space constraints by power of novel socio-economic relations at the macro-level. Nonetheless, there remains a lack of conceptualization of the capability of social action to *spatialize* at the micro-level as is proposed by the action-oriented perspective.

This chapter proposes to review the emergence of long temporalities and wide geographies as a first form of spatio-temporal restructuration inside a social science explanation. As a way to introduce the discussion, the incipient global narratives of the 17th century (the colonial period in Latin America) are presented as they have the capacity to illuminate the *enlarging* and *decentering* process inside social sciences narratives. Subsequently, a detailed analysis of Fernand Braudel's *longue durée* perspective and Raúl Prebisch's center-periphery theory are offered with the intention of explaining how enlarged historical and geographical narratives become a principle of social explanation. Finally, there is an excurse on global system analysis from the perspective of Immanuel Wallerstein, which argues that the double role played by the global structure, as social historical construction and as an interpretative perspective of analysis, is only possible thanks to the previous process of spatio-temporal restructuration.

In summary, this chapter proposes that geographical and historical explanations reaching the global scale is one of the forms in which spatio-temporal restructuration appears – in other words, from a macro-perspective. In Chapter 5, spatio-temporal restructuration will be discussed from the micro-perspective by using Hartmut Rosa's proposal of *temporal acceleration* and Werlen's concept of *everyday regionalization*.

4.1.- Emerging Narratives of the Global Scale in the Colonial Period; Europe and Latin America as One Scenario

Overview

This section looks at the need for major flexibility in the definition of the spatio-temporal regimes, which are the bases of the historical accounts, or in other words, are the foundations of many social science explanations. By briefly referring to the 17th-century colonial period in Latin America, the intention is to portray a more realistic picture of an interconnected world in what would be called *long periods* and *wide territories*.

It will be proposed that only by moving the sociological explanation to the time-space of long duration and wide scales is it possible to observe the *selective character* of the spatio-temporal regimes. Selective character essentially means that spatio-temporal structures are not spontaneous or lack for an intention; in other words, they are constructed to privilege a certain spatiality and temporality. The priority of the expanded histories and geographies in the colonial period is the analytical bases for moving the social explanation to the perspective of macro-narratives, which is a first and necessary step in the analysis of the spatio-temporal regimes.

The discussion will be introduced by considering the dynamism of the spatio-temporal frameworks with reference to what has been called a *worldwide connection in stable and long time spans*. This task will be met by using the emergence of global characters in the 17th century as a context for the narrative. Including Thomas Gage, the English clergyman well known by his historical accounts on the Spanish America and Sister Juana de Maldonado y Paz, the first Latinamerican woman writer. The argument is that both characters present strong evidence for a world context in which the spatio-temporal structures are no longer conceived as restricting action. By contrast, the life of these figures shows how the spatio-temporal structures start to be modified by a particular type of social action that has the ability to create an interconnected experience of the world since the 17th century.

4.1.1.- An Interrelated World in Longer and Stable Time Spans

> Mucho te agradezco, Rosa,
> tu voluntad y cariño;
> pero dejar no podemos
> de seguir nuestro camino
> porque nos vamos huyendo
> para las tierras de Egipto,
> pues Herodes busca ansioso
> a éste, mi adorado niño;
> desesperado y furioso
> sólo procura destruirlo,
> por eso no dilatemos,
> porque no corra peligro,
> y en pago de vuestro amor
> anda, llama a tu marido
> y vengan juntos a ver
> a Jesús recién nacido
>
> Sister Juana de Maldonado y Paz. Entretenimiento en
> obsequio de la huida a Egipto in Rossi de Fiori, Iride (2008: 362)[43]

At El Monasterio de la Inmaculada Concepción, in the city of Antigua, Guatemala, in one of the first decades of the 17th century, Sister Juana de Maldonado y Paz (1598-1666) wrote the poem "Entretenimiento en obsequio de la huida a Egipto."

This nun was without a doubt one of the more remarkable characters of her time, as she had a significant level of education and was specially gifted for the arts, especially music and poetry, and she received great admiration in her city, which considers her a *muse.* Nevertheless, this description would not be realistic if it neglected to mention the burden of envy and jealousy she suffered from her contemporaries. Historical narratives talk about her amazing beauty, canny intelligence, manners and etiquette. With all of these virtues, it is no surprise that she was commissioned to serve as a model for religious paintings, a situation that ultimately led to an accusation from the Mexican Inquisition. As was the case with many other independent women of that time, she decided to engage in the religious life by taking her vows at the age of 21, as this was the only way to obtain the freedom to pursue her intellectual or artistic

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[43] I am very grateful to you Rosa, for your good will and affection; but we cannot help but continue on our way in flight to the land of Egypt, since Herod, desperate and angry, is looking for my Beloved Child and only seeks to destroy Him, therefore let us not delay, so that He is not endangered and and in payment of your love, go, call your husband and come together to see the newborn Jesus.

inclinations. A good perspective of the historical situation and the relevance of Sister Juana can be found in the following quotation of Luz Méndez de la Vega (2002):

"Mujer excepcional, primera poetisa y dramaturga centroamericana, la guatemalteca Sor Juana de Maldonado y Paz o Sor Juana de La Concepción (1598-1666), desde muy joven, fue injustamente mucho más perseguida que amada. Su extraordinaria belleza y talento, así como su privilegiada posición social, como hija del Oidor don Juan de Maldonado y Paz, la hizo centro de envidias, de intrigas y de escándalos, fomentados por las grandes rivalidades sociales, políticas y religiosas que dividían en bandos a todos los pobladores y en especial a las principales familias de la ciudad de Santiago de los Caballeros de Guatemala –hoy Antigua– entonces centro del Reino que comprendía toda la región centroamericana." (Méndez de la Vega 2002)[44]

The poem reproduced at the beginning of the chapter is an *entretenimiento*, a literary piece that can be an amusing and soft theater play, like an anecdote. Historians have presumed that a nun from another cloister in the kingdom, which included the whole region of Central America, commissioned the piece. The play is framed within the known *autos*[45] of Christmas, which gave a particular space to literary creativity, because the account regarding the escape to Egypt is not particularly well documented in the Holy Scriptures, and the festive mood of this religious commemoration allowed a more permissive representation. In this light, i) Sister Juana performed the escape no longer located in the Middle East but in the new world; ii) Maria, Joseph and Jesus would not meet shepherds but the indigenous people ("*indios*"), and iii) not three

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[44] "An exceptional woman, first Central American poet and playwright, the Guatemalan Sister Juana de Maldonado y Paz or Sister Juana de la Concepción (1598-1666), from her youth, was unjustly more persecuted than loved. Because of her extraordinary beauty and talent, as well as her privileged social position as the daughter of the Magistrate Juan Maldonado y Paz, she became the center of envy, intrigue and scandal, fomented by the major social, political and religious conflicts that divided all people into factions and especially the leading families of the city of Santiago de los Caballeros de Guatemala –today called Antigua- at that time, the center of the kingdom which then included the entire central American region." (Méndez de la Vega 2002). Translation by the author.

[45] "Desde el punto de vista del género teatral, el entretenimiento o divertimento es una "obra de carácter ligero, cuyo fin es exclusivamente divertir" (RAE) y el auto, por su parte, es una "composición dramática de breves dimensiones y en la que, por lo común, intervienen personajes bíblicos o alegóricos" (RAE)" (Rossi en Maldonado 2006: 19) "From the point of view of the theatrical genre, entertainment or amusement is a "work of light character, whose purpose is solely to amuse"(RAE) and the auto, meanwhile, is a "dramatic composition of short dimensions and in which, usually, biblical or allegorical characters are involved "(RAE)" (Rossi in Maldonado 2006: 19). Translation by the author.

kings or three wise men appear but a group of anonymous nuns who offer the holy Family a safe place in their own cloister.

In this representation, the indigenous people encountered during the escape to Egypt immediately recognize the holy family and Jesus' status as God: "ay, Herodes, si supieras que este niño soberano es rey del universo y su vida está en tu mano, qué de otro modo estuvieras (serías), no fueras tan inhumano, no tan cruel, tan ambicioso ni tan soberbio ni tirano" (Rossi 2008: 365)[46]. In the same movement, they start an effusive and funny discussion of the rights of the woman or the man to take care of and pamper the newborn: "Ay, qué hombre tan aburrido! Apártate, vos Francisco… cómo me lo queréis quitar!... Tú mujer no estás moliendo. Deja para mí el niñito; ya no aguanto, ya me muero por tenerlo abrazadito (Rossi 2008: 364)[47].

While Maria and Joseph use sophisticated language and perform the traditional gender roles, the fragile woman and the caretaker, Rosa and Francisco, both indigenous characters, speak in a Spanish dialect that is mixed with words from native languages. They perform a type of couple relation with less hierarchical gender roles; the man tries to order the woman around, but she refuses and ends up dominating him with her cunning. Another difference, according to Íride Rossi de Fiori (2008), is the courtesy of the play, as it did not imply a dishonored Joseph – as was the case in the plays produced in Spain at that time – who constantly mentioned the misfortune of being married to a pregnant virgin.

This theater play, which should be considered contemporaneous with the famous paintings of the Dutch Golden Age[48], in the cases of, for example, Rembrandt van Rijn (1606-1669) and Johannes Vermeer (1632-1675), represents the artistic production of one of the richer areas of an emerging global economy. It is during that period in which the extractive enterprises of silver and new crops of Latin America

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[46] "Ay, Herod, if you knew that this child is sovereign King of the universe and his life is in your hands, you would be otherwise, you would not be so inhuman, not so cruel, not so ambitious, nor as arrogant, nor a tyrant" (Rossi 2008: 365). Translation by the author.

[47] "Oh, what a boring man! Get out Francisco...why do you want to take him away from me! Woman ... Your wife is wearing me down. Leave me the little boy, I cannot endure more. I'm dying to hold him in my arms (Rossi 2008: 364). Translation by the author.

[48] Timothy Brook (2008) follows the same line of thought when he presents an account of the Dutch Golden Age by analysing the global trade references found in seven paintings by Johannes Vermeer.

gained a foothold in the global economy[49]. Concurrently, the European North, represented by the city of Amsterdam – and not the cities of the strong kingdoms of Spain and Portugal, as many people imagine – slowly gained control of the international interchange[50].

The existence of Sister Juana de Maldonado y Paz is known today not just as a result of the Spanish records kept in Guatemala and Mexico, but also through her contact with the English priest Thomas Gage. Thomas Gage, a missionary from the Dominican Order, was taught and ordained in the south of Spain and remained in Spanish America between 1625 and 1637. Gage reveals in his chronicles, first published in England in 1648, his critiques of the Catholic domination of the new world. In these writings, his discontent with the Jesuit order is especially clear. He also refers to political and military issues relevant to the English strategy of approach to America in the 17th century. Most interestingly, he also refers to scenes from everyday life: ways to prepare food (Campos 2009), forbidden moral affairs, intrigues besides politics, and the way of living in indigenous settlements or in those spaces created by slaves who had escaped, the so-called "maroon" – *cimarrón* in Spanish – who lived in freedom beyond the rule of the Spanish Kingdom (Gage 1958 [1928]).

The historical account presented here reveals an interesting mixture of characters. There is the English-Spanish Catholic priest, who although a British nobleman, had to flee, first to Belgium and then to the south of Spain, to be educated at a seminar an in what his family consider as the true religion. Another important character is Sister Juana de Maldonado y Paz, the daughter of a rich "*oidor*"[51] in Guatemala, who managed to live in opulence, surrounded by poets, painters and writers. Thomas Gage escaped religious persecution in his home country, but despite living in Spain for many years, he was still required to change his name to Spanish in order to obtain permission to travel to the colonies[52], because it was forbidden for an English citizen

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[49] See Timothy R. Walton (1994), especially Chapter 3, titled "Ascendancy 1580-1620," for an account of the history of the Spanish Kingdom and references to international trade. To better understand the Atlantic System between Europe, especially Spain and the Colonies of Latin America, see Stein and Stein (2000), "Part One: The Legacy."

[50] See Braudel (1985 [1986])

[51] *Oidor* was the Spanish title of a judge in the Royal Audiencias and Cancillerías, the high tribunal in the Spanish Kingdom, and consequently also in the American colonies.

[52] In Spanish, Thomas de Santa María.

to travel to the Spanish America. The journey was originally in the direction of the Philippines, but Gage secretly intended to remain in America, first in Mexico and then in Guatemala, where he was willing to learn the languages of the native peoples.

The references made by Gage to Sister Juana de Maldonado not only expose her delicate virtues but also the attraction that was induced in the bishop, in a sort of "courtesan novel" (Tejera 1996). In those passages, Gage talks about the perhaps not-so-secret affair between the bishop and the sister in the luxury house built for the family of the nun inside the cloister. But Gage was not only famous for his romantic descriptions; he is also acknowledged in a depiction of the colorful and joyful life on the new continent, especially the Caribbean landscape, so different from the gray of Europe.

In "El Auge del Imperio Español en América," Salvador de Madariaga quotes Gage's account of the story of Doña Juana to prove how colorful life was in the New World: "¡Qué lejos estamos de ese cuadro sombrío y medieval que nos pintan sombríos y medievales historiadores aún de nuestros tiempos! Esta vida de las Indias que nos describen los que la vieron con sus propios ojos era precisamente la que tenía que surgir cuando la pasividad apasionada de los españoles topase con aquel torrente de riquezas y bienestar que emanaba del abundoso Nuevo Mundo. Olas sobre olas de color de goce de fruición presente que surgen entonces en las Indias bajo el sol esplendoroso de la paz y la abundancia"[53].

The characters of Sister Juana de Maldonado and Thomas Gage, their literary production and, in a larger sense, their lives in the 17th century, speak to the central issues for social sciences that deserve closer attention: i) On the one side, the international migration of ideas and people is an obvious issue. Catholicism crossed the Atlantic and is embodied by different kinds of people, perhaps becoming the stronger imaginary in the New World. Over the course of two centuries, faith was

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[53] Dionisia Tejera (1996: 206), quoting Salvador de Madariaga's "El Auge del Imperio Español" (1959: 273). "How far we are from the dark and medieval painting that dark and medieval historians still paint in our time! The description of the life of the Indias by those who witnessed them with their own eyes was precisely what had to happen when the passionate passivity of the Spanish touched with this abundant torrent of wealth and well being emanating from the New World. Wave upon wave of color, fruition of present enjoyment that arise in the Indias under the bright sun of peace and plenty" Dionisia Tejera (1996: 206) referring to Salvador de Madariaga "El Auge del Imperio Español"(1959: 273). Translation by the author.

installed in everyday life practices and became fervently professed by the native population of Central and South America. ii) From the other side, a less evident issue is crossbreeding (*mestizaje*). Not only did this process take place from Europe in the direction of America, but at the same time European culture was also influenced by the New World. Catholic practices rooted in America began a journey back to the old continent in the shadows of the cultural flows, showing the hopelessness of having a comprehensive understanding of European Baroque and Enlightenment without considering the role played by the new continent, which from so many perspectives serves as a reference for the consolidation of the European self-imaginary[54].

In a more abstract formulation, I want to propose as central argument in this section that *historical research cannot be properly organized without a continuous process of decentering and defocusing in geographical and historical terms.* This double movement of the researcher appears when we are confronted with making sense of characters such as Sister Juana de Maldonado y Paz and Thomas Gage in a more realistic portrayal of the 17th century. If we do not want to bring their lives to the level of mere anecdote, we should include the intricacies of the historical-geographical processes in the analysis; very often, such an approach is discarded. In other words, in order to overcome the anecdotal condition of *facts* and *events*, a new and more complex cartography of crossbreeding influences should emerge. That should be interpreted as the central characteristic of a social realistic approach to the global-interconnected context that was formed four centuries ago.

Attempting to challenge the self-evident condition of the unidirectional influence of cultural flows during the 17th century, *blurring the predefined spatio-temporal framework* of analysis by a process of conscious *decentering in geographical as well as historical terms* is the right approach. Here, it is not only the big narrative about

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[54] In a similar sense, Sergei Gruzinski states, "La estancia de Warburg entre los Hopi perfila unos temas que recorren este libro de punta a cabo: los mundos amerindios, la Italia del Renacimiento, la búsqueda en América de claves para comprender Europa, pero también el contexto de la mundialización –de la que la familia Warburg es una de las grandes figuras emblemáticas de finales del siglo XIX- y la dificultad, que nosotros compartimos, de "ver" los mestizajes, y que aumentan a la hora de analizarlos." (Gruzinski 2000: 15). Warburg's stay among the Hopi outlines some themes that run through this book from beginning to end: Amerindian worlds, Renaissance Italy, the search in America for clues in understanding Europe, but also the context of globalization -of which the Warburg family is one of the great iconic figures of the late nineteenth century- and the difficulties, that we share, to "see" the mestizaje, and that increase at the moment of analysing them. (Gruzinski 2000: 15). Translation by the author.

the consolidation of Amsterdam as the center of world trade (17th century) or its subsequent re-localization in London (18th and 19th centuries), which are the privileged places to understand cultural influences. On the contrary, to move the research into complex biographies could offer useful clues to begin the research of micro-social facts that construct the spatio-temporal universes. Subsequently, they can be theoretically organized in line with Braudel's *universes of commerce*, and in further and more complex formulations, they could be considered as part of the so-called *world-economy* (Weltwirtschaft). In analytical terms, *decentering* should be considered logically as well as practically preceded by *an enlargement of the spatio-temporal frameworks.*

A second epistemological step, after the twofold movement of *enlarging* and *decentering*, would be to find *a logic of explanation* that makes sense of the researched phenomena. This logic operates together with the challenge of putting distance with inherited spatio-temporal frameworks of research by *enlarging* and *decentering*. Thus, the two former processes could be described as an integrative approach to social research in terms of spatio-temporal restructuration. Within this new epistemological framework, the form of action researched, its geographical extension as well as its temporal duration, would be inextricably connected with the type of social explanation submitted.

Some similar approaches to this methodological proposal have been faced in part by prominent scholars of the 20th century. At that time, conceptualization emphasized the tension with *a history* – and for the purpose of this thesis, we could argue *a sociology* – that was concerned with nomothetic ideas or idiographic facts. This is the cases with Karl Popper (2004 [1956]), Raymond Boudon (1986) and Robert Nisbet (1970).

The exploration offered in this chapter, by reason of its extensive length, has been reduced to i) the trace made by the French "Annales School", ii) the dependency theory, and iii) in the form of an excurse to the global system analysis approach. The main target of the theoretical chapters is to advance the description of modernity as spatio-temporal restructuration. In this sense, a group of theories are revisited in their conceptual contribution to this endeavor. Therefore, the current section is devoted to describing what is considered a first theoretical dispositive in the search for spatio-

temporal restructuration. I call this dispositive the *expansion of the temporal and geographical framework of analysis,* and as was said before, is proceeded by *enlarging and decentering the gaze*. The thesis argument hypothesizes that social phenomena are not independent of the spatio-temporal frameworks in which they are defined and, at the same time, it will claim that social phenomena are active in the construction of these spatio-temporal frameworks. The whole reach of this last proposition will be better explained in the next chapter. This section of the current chapter will describe the determination of social facts of their constitutive spatio-temporality.

As a way to better illustrate the argument, the negative formulation of the proposition will be discussed: What happens when the social phenomenon are removed from their constitutive spatio-temporalities? Every social phenomenon is only a source of information inside its constitutive spatio-temporal framework. If proper measures are not taken, social explanation could easily be caught up in the *traps of scale and period* (scaling and periodization). This means that social science explanations constantly, but misleadingly, have an inclination to move research phenomena farther toward its constitutive spatio-temporal structure.

What happens at a specific scale does not necessarily occur in other, bigger or smaller, higher or lower scales. In the same way, what happens in a certain period cannot automatically be positioned in the past, the future, or a temporal context that is relatively higher or lower. A change in the scale and the period of analysis will alter the phenomena, and this not only for the case of common social issues – e.g. differentiation, modernization, secularization, and segregation – or typical economic issues, such as accumulation, revenues, and spending. In addition, it may affect the same spatio-temporal articulation, which becomes preponderant in the scale and period that are being researched. A temporal acceleration in the level of the individual does not immediately represent the same process at the communitarian level. That is to say a territorial interconnection between two cities beyond the national frontiers does not necessarily represent an international connection *per se*.

Exactly in this respect, the criticism raised by Raymond Boudon to the research conducted by Robert Staughton Lynd and Helen Merrell Lynd, "Middletown: A study

in American Culture" (1956), follows a similar explanatory route. To explore the wave of modernization in the contemporary society could not be researched on a smaller geographical level. What happens in Middletown in terms of work, home and family, youth, leisure time, religion practices, community, and government, is not logically the same trend followed by the rest of North American culture. In other words, what happened in lower socio-geographical scales by no means rules over – or determines – what occurs in higher levels of social actions.

Boudon is not making his argument solely in reference to Lynd, but especially against one of their fellows, Theodore Caplow, who replicated the study at the end of the 1970s (Caplow 1979, 1982). The latter states, after concluding his studies, that contrary to expectation, Middletown does not show a clear tendency toward major equality, secularization, bureaucratization or depersonalization (in Boudon 1986: 24). But Boudon is very explicit in stating that the type of structuration that occurs in one scale may be different to the situation in another.

"We could counter Caplow by saying that Middletown has no bearing on the matter at hand. It is true that there was no clear trend towards bureaucratization and that at the end of the 1970s the working population was scattered over a greater number of on average smaller units than in the early 1920s, but that may well have been the result of chance factors. The way socio-economic activities are structured in a particular town may change in one way, whereas the same pattern on another scale - nationally, for example- may change in another. Middletown certainly cannot be seen as an autonomous system" (Boudon 1986: 25).

Delving further into the argument, when the condition of a lower scale or a short period it is misleading considered as the prevalent characteristics of higher scales and longer periods, using as reference the work of Margaret Archer, we observe an *upward conflation* (Archer 1995: 4). In this sense, the English sociologist proposes that the structure becomes passive in social explanation, a sort of epiphenomenon of the individual components of society. In short, individual actions on aggregate may completely solve the problem of the emergence of structure. From this perspective, structure is no longer capable of influencing the social actors. From the spatio-temporal restructuration perspective, upward conflation shows how long periods and

wide scales are powerless in influencing particular or individual social action. The solution to the problem of spatio-temporal structuration is misleadingly solved by an overconfidence in the ability of daily action to create spatio-temporal regimes.

By contrast, when the characteristics of a higher scale or period are misleadingly distributed in all contained scales and periods, it is possible to describe a *downward conflation* in the spatio-temporal regime. Using the theorization of Archer (1995: 3), downward conflation means social theory only advances a holistic explanation of social phenomena, but no reference is made to individual motivation.

As a simple derivation of Archer's perspective, it becomes possible to state that a particular spatio-temporal scale's and period's properties belong to it and are by no obvious way transferable. Let us finish the brief introduction to the spatio-temporal restructuration by analyzing the epistemological steps of *enlarging-decentering* and seeking *explanatory principles* in the frameworks of downward and upward conflation.

Spatio-temporal enlargement and decentering do not represent an upward conflation; on the contrary, it is an explanatory strategy to consistently isolate the wide geographical and long temporalities of phenomena that may require explanation. In enlarged spatio-temporal descriptions, slow social processes are not thoughtlessly condemned as arbitrary or minor facts. Long spaces and long time periods allow the emergence of connections, comparisons and structures inside the *explanandum*, which is not possible when every phenomenon is analyzed as a product of singular and limited spatio-temporal facts.

The search for explanatory principles, understood as *explanans,* is not *directly derived* from social facts, as could be the case in downward conflation. Explanation principles are only possible by a process of abstraction in which social conceptualization is distanced from the organization of slight social facts or avoids getting lost in very abstract generalization. Social explanation requires observing how the spatio-temporal frameworks emerge, are structured, restructured or even produced by social actions.

In the next section, this discussion will develop with references to the French Annales School in the work of Fernand Braudel, and the dependence theory of the ECLAC in the works of Raúl Prebisch.

4.2.-Achieving the Global Scale, and the Long Historical Processes as Phenomenon and Explanatory Principle

Overview

This section describes bigger geographical scales and long historical periods as a fundamental achievement in social science explanations. The intention is to show that the focus on different temporal spans and territorial boundaries is not merely a methodological decision. On the contrary, the spatio-temporal framework for social sciences ought to be considered as a fundamental epistemological and ontological concern, because they have the capability to re-articulate the social explanation offered.

The global scale is presented in this account as a theoretical achievement, because it is the only spatio-temporality that allows for the consideration of the interconnected and simultaneous characteristics of social phenomena that exceed the local and national level. In this way, one could state that the *global scale* and the *long time span* overcome the contingent character of eventuality. The section does so first by constructing an explanatory narrative that I will provisionally call *spatio-temporal expansion* as a methodological devise, briefly following the roots of the French "Annales School" and the Latin American "Dependency Theory."

Expansion in this case means to enlarge the *spatial* and *temporal frameworks* of sociological concern, which simultaneously reorganizes the *type of action* considered as the most relevant for the social explanation that is offered. Along this line of thought, it is possible to claim that the *explanatory principles* used by different theoretical approaches cannot be derived from any geographical scale or historical period, since they are not objects to be contained in a spatio-temporal framework. Conversely, the proposed *type of actions* and the pre-defined *spatio-temporal frameworks* are active, and they mediate the emergence of certain *explanatory principles*. In other words, enlarging the frameworks of interpretation, highlighting social logics of action and building explanatory principles together in a triad are co-extensive.

First, Fernand Braudel's *longue durée* is used as a way to explain the relation between the enlargement and decentering of the analysis frameworks, and the emergence of an explanatory principle embedded in a particular spatio-temporal context. Both explanations are embraced by highlighting his notion of *structure* in particular. Second, further along the discussion of *explanatory principles*, the logic of structural dependency in the peripheral countries will be analyzed with reference to the ECLAC (United Nations Economic Commission for Latin America and the Caribbean) proposal, developed by Raúl Prebisch in the first half of the 20th century. Both explanations have been used as a central piece to improve our understanding of spatio-temporal restructuration as a selective social process.

4.2.1.- The Double Role of Fernand Braudel's *Longue Durée*: Enlarging the Spatio-Temporal Contexts and Positing a New Explanatory Principle

In his *Personal Testimony*, Fernand Braudel (1972) tries to answer the very broad question posited by William Hardy McNeill the editor of the *Journal of Modern History*, namely *How was he shaped as a historian?* In his account, the emblematic figure of the French Annales School refers to two important events that occurred outside his native France and are fundamental to understanding him as a historian. First, his nine years as a teacher in Algeria (1923-1932), and second, during the Second World War, his time spent as a prisoner close to Lübeck, Germany (1940-1945). I would like to use these two descriptions as a central thread to follow the emergence of a novel social explanation that I portrayed in the section above as the threefold process of: *i) enlarging the spatio-temporal frameworks, ii) decentering inherited and unreflective frames of interpretation, and iii) seeking a principle of explanation.*

In reference to his most famous work, "La méditerranée et le monde méditerranéen a l'époque de Philippe II" (Braudel 1949 [1966]), Braudel offers a perfect example of what I call the *enlarging and decentering processes*, which should be considered in their double role of *research strategy* and *ontological stance.* In what concern to the thesis analysis, enlarging and decentering represent a particular form to *situate* the object of research, to make it appear in its fullness. As Braudel metaphorically says *"la mettons en lumière"* (Braudel 1985 [1986]: 89). But this research strategy is never just to *shed light.* Braudel knows as well as Lucien Febvre did, that they are claiming a novel historical ontology, which follows the line of philosophical history opened by their precursor Henri Berr. A novel ontology means, therefore, twisting the certitudes of a history based in events and moving toward a *deep history,* which is so real that the researcher's attitude can only be described as *bringing back* its full dignity.

"Une histoire profonde, nous ne la découvrons pas, nous la mettons seulement en lumière. Lucien Febvre eût dit : «Nous lui donnons sa dignité ». Et c'est beaucoup déjà. " (Braudel 1985)

Braudel describes life in Algeria as one framed by urban places and filled with the joy of living, and makes reference to his recurring travels into the northern regions of

Africa. From this life perspective, the Mediterranean starts to appear to him in all its greatness and splendor. He, like many others, recalls a portrait of the sea, which I claim is a picture that is enlarged in geographical as well as historical terms.

My stay in Algiers lasted until 1932 […] I thus had the opportunity to give myself over to the pleasures of living in a magnificent city with great *joie de vivre,* and to visit intensively all the countries of North Africa, into the Sahara, which fascinated me. I believe that this spectacle, the Mediterranean as seen from the opposite shore, upside down, had considerable impact on my vision of history. But the change in my viewpoint was slow. At any rate, at that point in my life I did not understand the social, political, and colonial drama which was, nevertheless, right before my eyes. […] Being in Algiers, I thought that a work devoted to Philip II, Spain, and the Mediterranean would make an acceptable thesis subject. And in fact it was accepted at the Sorbonne without difficulty. (Braudel 1972: 450-451)

Situating the origins of his doctoral thesis during his time in Algeria, Braudel shows how the enlarging perspective of history gained ground in his thought, but it would not be until his experience as a prisoner that this stance assumed existential thickness, and it is this part that I would like to return to. Still in the north of Africa, many years after his stay when he tried to cast light on those earlier times, the author emphasizes the perspective of the Mediterranean gained from the other shore as the sources for an *upside-down* image. In this simple metaphor of an imaginary cartography turned downward, I find the basis to claim that the *enlarging process* always maintains a sort of *factual connection* with the *decentering one*. Enlarged and decentered frameworks are factually coupled.

When Braudel gained the double perspective over the whole Mediterranean, from the one shore to the other, the vision of that moment that emerges is of a *colonized world* and makes it impossible for him to have a realistic portrayal of the totality, only looking from the capital to the colony, the center to the periphery, or the north to the south. The perspective of the colonizer had been embodied for a French historian teaching in the colonial Algeria, for an English-Spanish priest evangelizing America or for a Creole nun who constructed bridges between European and Latin American literature in the 17th century. But this hierarchical perspective embodied by all the

previous characters does not necessarily mean a type of manipulation. On the contrary, it is perhaps the only way in which the social enlarged and decentered framework of analysis appears as a strong base for research: by reclaiming its ontological dignity.

4.2.2.- Enlarging and Decentering, From the Event to the Long Time

There is a tension that Braudel hints at but does not truly tackle when he discusses how the enlarged vision of the Mediterranean increasingly gains substance in his reflection. He describes the movement from the character of Phillip II to the long-lasting Mediterranean as a sort of ripening. It may be that the author engages the true extent of his ontological shift, and in this sense, he achieves a full maturation in his concerns during this period. However, this explanation may not consider what I am trying to show, namely the co-extensive character of enlarging and decentering processes. The decentered framework of analysis, which shifts from Phillip II to the Mediterranean, is only possible by an enlarged perspective gained in a previous reflective movement, where the European shore was replaced by a total vision of the Sea.

"Little by little, I grew more doubtful about the subject of my labors. Philip II, the Prudent, the Sad, attracted me less and less, and the Mediterranean more and more. In 1927 Lucien Febvre had written to me (I quote from memory): "Even more than Philip II, it would be exciting to know about the Mediterranean of the Barbary States." (Braudel 1972: 452)

Decentering in this context means to displace *the subject of labors* – as mentioned by Braudel – and in this process changing its nature, dimension and scale. Transformation of nature appears when the historical research method leaves a single person or a group of persons and seeks to understand the long-lasting life of a region that, paradoxically, needs to be reconstructed in its totality by the same history that would study its reach. To give substance to this argument, I propose it is relevant to consider the reflection of Braudel about the World Economies (*Weltwirtschaft*) in his book "La dynamique du capitalisme" (1985 [1986]), in which he seeks to better

explain how enlarging and decentering indicate a change in the nature, the dimension and the scale of history.

In Chapter 3 of his book, titled "The Time of the World," the author introduces his intention to achieve a total perspective by connecting history with the idea of *assembling* of a world. *History is condemned to first assemble the puzzle of the world that pursued to research thereafter,* could be a good sentence to summarize the argument presented in the last two paragraphs. In this sense, *time of the world* and *world economies* (*économie-monde and Weltwirtschaft*) are possible to be presented as two complementary concepts, because together they construct a history conceived in a higher or macro-level geographical articulation. It is only inside this high level of history, which always remains interwoven with a wide geography, that successive flows of experiences and events acquire unity.

"Une histoire, c'est-à-dire une succession chronologique de formes, d'expériences. L'ensemble du monde, c'est-à-dire, entre les XVe et XVIIIe siècles, cette unité qui se dessine et fait sentir progressivement son poids sur la vie entière des hommes, sur toutes les sociétés, économies et civilisations du monde. […] Une fois de plus, il y a intérêt à fixer le vocabulaire. Il nous faudra, en effet, utiliser deux expressions : économie mondiale et économie-monde, la seconde plus importante encore que la première. Par économie mondiale s'entend l'économie du monde pris en son entier, le «marché de tout l'univers», comme disait déjà Sismondi. Par économie- monde, mot que j'ai forgé à partir du mot allemand de Weltwirtschaft, j'entends l'économie d'une portion seulement de notre planète, dans la mesure où elle forme un tout économique. J'ai écrit, il y a longtemps, que la Méditerranée du XVIe siècle était une Weltwirtschaft à elle seule, une économie-monde, on dirait aussi bien, en allemand ein Welt für sich, un monde en soi. " (Braudel 1985 [1986]: 83-85)

4.2.3.- *Longue Durée* as a Shelter Against Anguish

In view of the argument above the nature, dimension and scale of history have been redefined in Braudel's project, but for the author this had not been entirely clear until his experience as a prisoner in Germany. Confronted by daily news from one or the other side of the battlefield, Braudel's reaction was to distance himself from

occurrences and actions and seek refuge from European misery in a history beyond the events of everyday life in a place of the unchangeable. The next two quotations suggest the attitude of the French historian at this time.

"Choosing a long-time scale to observe from was choosing the position of God the Father himself as a refuge. Far removed from our persons and our daily misery, history was being made, shifting slowly, as slowly as the ancient life of the Mediterranean, whose perdurability and majestic immobility had so often moved me. So it was that I consciously set forth in search of a historical language – the most profound I could grasp or invent – in order to present unchanging (or at least very slowly changing) conditions which stubbornly assert themselves over and over again. And my book is organized on several different temporal scales, moving from the unchanging to the fleeting occurrence. For me, even today, these are the lines that delimit and give form to every historical landscape." (Braudel 1972: 454).

"Braudel wrote his review – and, for that matter, most of *La Méditerranée* – while interned in a German prison camp, and the circumstances of the war undoubtedly made him more responsive to a work that associated "history" with "destiny" rather than with events or *occurrences*."(Kinser 1981: 71)

Redefining the general spatio-temporal scale of history will modify the kind of actions implied in each of the different frameworks proposed. In the case of Braudel, this means the threefold temporalities of the Mediterranean. Braudel "*took as his object a vast geographical area and treated it in terms of three time scales: the long term, the conjunctural, and that of events*" (Santamaría and Bailey 1984: 78). Furthermore, these temporalities appear reinforced by their contents expressed in *the tripartite division of the Mediterranean into "the role of the environment," "collective destinies and general trends," and "events, politics and people"* (Santamaría and Bailey 1984: 79).

Seeking to account for an *explanatory principle* in the theoretical proposal of Braudel's history, it becomes necessary to take into account his concept of *structure* and the articulation of temporality in the notion of *duration* and *simultaneity*. But before engaging this task, it is important to state once more that the scope of this

section is by no means a profound revision of the fruitful work of Braudel. On the contrary, his theoretical achievements are used only with the intention to explain how social explanation achieves a higher spatio-temporal perspective. In addition, how is it that in the same process, the principles of social explanation as well as the social action considered both undergo a change?

Braudel sees his proposal of centering the analysis in the *longue durée* as an epistemological achievement, and it is precisely in this way that Wallerstein reflects upon it, when he says that Braudel's observation of history was more concerned with the notion of time than with the idea of duration, because his intention was to restore the *longue durée* as a central epistemological device in social science (Wallerstein 1998: 83). Nevertheless, the temporal arrangement proposed by Braudel involves a particular type of paradox. In his search for stability – in other words, in his pursuit of the unchangeable – it is the temporality that should be expanded. However, the situation is the opposite when we say: *it is just and only time that changes everything.*

Braudel will solve this apparent contradiction with the introduction of his particular understanding of structure, but before beginning this discussion, it is necessary to deepen the reference to common people understanding in the notions of *change* and *permanence*. Temporality in the sense of *as time goes by* is normally connected with transformation in terms of corruption, aging and death. But at the same time, the *pace of time* is the only framework in which social action may have the chance to put back together something that is broken. On a major level of abstraction, it is possible to derive from the first level of analysis the following idea: It is only time that binds birth and death. From the second examination, it is possible to derive the idea that it is only time that allows the discernment between the essential and the ephemeral.

Coming back to the notion of structure in Braudel, it is feasible to state that his scheme bears some resemblance to the phenomenological approach of Husserl. Single historical phenomena are not essential to history; they are a misleading orientation to understanding it. In the proposal of Husserl, the strategy to *put into brackets* the assumption of the external world's existence expresses some commonalities with Braudel's dismissal of small facts. Both are searching for something stable or even eternal beyond daily facts. The subsequent method of Husserl's phenomenological

reductions in searching for the essence has some similarities with the route proposed by Braudel's history moving toward the first person's recounting of everyday life events. In the same way that Husserl proposes to reach a safe terrain by canceling the assumption of reality, Braudel will move the understanding of history beyond the welter of events. Of course, for Braudel, this safe terrain is not inside the consciousness, as is the case for the phenomenologist. Nevertheless, the *longue durée* as well as the *phenomenological reduction* offers the chance to achieve invariability. This in both cases is claimed as the right foundation for true knowledge[55].

"By structure, social analysts understand something organized, something coherent, relatively fixed relations between social realities and groups. For us historians, a structure is no doubt something put together, an architecture, but even more a reality that time affects only slightly and maintains over a long period… All structures are simultaneously underpinnings and obstacles (1969:50 pp)" (Wallerstein 1998: 82)

"A reality which can distort the effects of time, changing its scope and speed… [structures] operates simultaneously as a support and an obstacle. As obstacles, they act as limitations ("envelopes" in the mathematical sense) from which man and his experiences can never escape (1949 [1972]: 18)" (Santamaría and Bailey 1984: 78)

In the last two quotations, two dimensions of structure appear for Braudel's readers: the strong stability of the structure and its safe position to achieve correct knowledge, and the condition of structure presented as support and obstacle for social action. By considering the perspective of structure an obstacle, it functions as a restriction to the influence of actions and events from lower scales and prevents them from accessing higher scales. This results from the capability of the structure to change the effects of time; in other words, time affects structure neither directly nor deeply. In the formulation of structure as a limitation, the social action is subjected in its constrained

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[55] Even if Braudel may not necessarily be engaged in a phenomenological method of reduction, the parallel appears with some clarity in the interpretation made by Wallerstein and quoted by Santamaría and Bailey: "Furthermore, what Braudel's plural time perspective does provide is a more sophisticated methodological framework for formulating questions about change, a framework which avoids lineal assumptions of evolutionary change. The line of questioning made possible, if not actualized by Braudel, has been summed up by Wallerstein in the following way: "you take an event and you look underneath it and see it in terms of the long-term, asking was it epiphenomenal? What is momentary? Was it a kind of a flash? Or did it really make a difference?" (Santamaría and Bailey 1984: 79)

space of eventuality to the material and the symbolical constraints that come from unidentifiable times.

"First there are multiple social times which interweave and owe their importance to a sort of dialectic of durations. Hence, secondly, neither the ephemeral and microscopic event nor the dubious concept of infinite eternal reality can be a useful focus for intelligent analysis. We must rather stand on the ground of what I shall call the unexcluded middle […] if we are to arrive at a meaningful understanding of reality." (Wallerstein 1998: 83)

Nevertheless, even if stability is obtained by moving the analysis to the scale of the *longue durée,* it is not meant to be anchored in the realm of nomothetic propositions or laws. Wallerstein's quotation above shows his inclination to find a midpoint in terms of grasping valid knowledge. But what could it mean, and what are the implications of this standpoint? It means the temporality of the *longue durée* as ruled by structures is not totally unchangeable but only slowly modifiable. The duration of the coupled change-permanence in social phenomena lies at the very center of the three temporalities presented by Braudel: i) individual history, ii) social history, and iii) geographical history. But if we want to understand the interplay of these three, it must to be said that structure, as a limitation to action, becomes a historical achievement of geographical history, which is the only real context where society acquires sense and significance. From here, conclusions can be drawn to understand the characteristic of spatio-temporal restructuration discussed in this thesis, since the level of the singular and isolated event cannot contain the essence of restructuration, because they lack the stability obtained in the long run. Effective and novel spatio-temporal arrangements are evolving slowly, and they need to overcome the tendency toward the stability of wide geographical history.

"Braudel's geo-history is based on three assumptions […] (1) it has a specific, concrete object that is "tied to the soil," to down-to-earth, elemental, ecological conditions; (2) a geo-historical process, because it develops slowly, represents a relatively "immobile" history whose characteristic patterns last for long periods; and (3) geo-history is fundamental to other kinds of historical processes and underlies other forms of historicity." (Kinser 1981: 69)

The descriptions Kinser makes of the three main characteristics of Braudel's geo-history are very relevant to portray how spatio-temporal restructuration takes shape. For the author, Braudel's geo-history in propositions 1 and 2, describe slow historical processes attached to the wide territories. I would like to propose a change in the notion of geo-history in the quotation above by replacing it with "socio-spatial restructuration" in propositions 1 and 2. With this very simple step, it becomes possible to argue that spatio-temporal restructuration i) is rooted in very elemental conditions, and its changes runs alongside the transformation of the material conditions of life. Considering the case of mobility and transportation as an example, before modernity it was organized by body or material conditions, and in this sense it could not be detached from so-called *ecological restrictions* during long periods of time; and ii) evolves in different temporalities. From one side, there is a slow arrangement of general forces that comprise the bases of the spatial and temporal regimes; from the other side, there are internal processes that have been constantly accelerated and could be called a spatio-temporal arrangement. In anycase the temporality of the spatio-temporal restructuration slowly develops by organizing the relations between arrengemnts and regimes.

A new image of spatio-temporal restructuration appears in the last paragraph, and it has its origins in a very simple observation. Multiple levels of action exist that are ruled by different spatio-temporalities. They are not necessarily interrelated (they work with certain degrees of autonomy), but they are not fully independent. A simple metaphor to better understand this proposition can be constructed by using the notion of *inertia*. Inside a train traveling at a speed of 200 kilometers per hour, somebody can choose to walk to the restaurant wagon slowly or cover the same distance by running frenetically. A kid can play and jump around, simply remain quiet, or even sleep in her/his seat. In the case of spatio-temporal restructuration, the train is the emerging spatio-temporal regimes that slowly evolve from steam propulsion to electric energy over the course of centuries. The people inside the train, with the varying speeds of their movements, are the social action framed in what I call spatio-temporal arrangement.

Summarizing the argument, i) to arrive at a stage of accelerated and disarticulated spatio-temporal regimes, have been possible by a very slow rearticulation; ii) the general trend of accelerated and disarticulated spatio-temporal regimes, in long periods and wide spaces, do not necessary imply the same spatio-temporal restructuration at the level of the social action (inside the wagons of the train). I will come back to this argument in the following section, but first, it is important to reengage the discussion about Braudel's conceptualization and his understanding of the connection between what he calls his "grand abstractions": space, time, and man.

"Three grand abstractions are granted equal status in Braudel's historiography: Space, Time, and Man. Space is usually analyzed as a series of socially influenced ecological systems, and Time is a multiplicity of 'levels' with different 'rhythms.' Man appears as the intersection of this Time and this Space, since they work upon human endeavor to average out individual cases. The longer the span of time and the larger the space, the more the collectively differentiated efforts of individuals, articulated in different social groups, seem to lose their specificity as well; what one class or one nation accomplishes is finally subject to the iron rule of environment and to the habits, infinitely repeated, that are engendered by this environment. Thus, Man's 'unity' implies social and individual anonymity: 'I am tempted, confronted by man, always to see him en-closed in a destiny that he scarcely helps fabricate, in a landscape that stretches before and after him in the infinite perspectives of *long duration*." (Kinser 1981: 67)

It is still the case that spatio-temporal organization in the long periods and wide scales overrides the effort of the individual to differentiation. In Braudel's work, the conceptualization of a human being as a point of encounter of time and space offers, for the case of spatio-temporal restructuration, a very relevant perspective. In this perspective, the articulation of time and space runs through individual actions; nevertheless, the long and wide structures stabilized in history are disentangled from the realm of singular events. Within this interpretation, no idealistic standpoint is engaged. On the contrary, a realistic perspective is highlighted in a twofold perspective: On the one hand, the level of the event is connected to contingent spatio-temporal articulation; on the other hand, the structures are at the bases of the long-lasting spatio-temporal regimes. The point of encountering that a human being is for

time and space helps to organize conceptually the multi-level and multi-temporal character of historical systems. In other words, spatio-temporal regimes are not a coherent set of spatio-temporalities, because they are connected with the contingent condition of individual actions.

In the following section, the dependency theory and the global system analysis approach are discussed in order to better engage the study of *explanatory principles* inside the perspective of spatio-temporal restructuration.

4.3.- How Explanatory Principles Become a Logic of Explanation; Prebisch and the Latin American Dependency Theory

Raúl Prebisch (1901-1986) and Fernand Braudel (1902-1985) were very much contemporaries, but although they lived almost exactly at the same time, it does not seem like their paths ever crossed, and they did not know about each another's work[56]. This section of the thesis proposes to understand a complementarity in the work of Braudel and Prebisch, because both of them, from very different perspectives and with different motivations, arrived at an interpretation of the world as an *emergent level* and an *interrelated system*. Basing my research on an analysis of both authors, I will propose that the traditional social interpretation based on the limits of the National State is the wrong frame within which to address the current wave of spatio-temporal restructuration, especially in relation to the economic dimension[57]. The enlarged and decenter geographies from the world-economy are the right scale for the analysis.

The section devoted to Braudel starts by asserting how in his theorization it is possible to highlight the notion of spatio-temporal enlarging and decentering and how, with both concepts, it becomes possible to restore the centrality of the question about spatio-temporal restructuration in the social sciences. The consideration of Prebisch's work seeks to prove how the enlarging and decentered analytical perspective could be reconfigured in a specific logic of structuration at the global scale. It is precisely in these terms that the notion of center-periphery inside Latin American structuralism will be discussed[58].

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[56] In the words of the historian Joseph Love, in personal correspondence with the author: "It is possible, but I think unlikely, that Braudel and Prebisch knew of one another's work in the 1930s or 40s. Prebisch at the time was already director of the Central Bank in Argentina, and Braudel was a member of the French mission that helped build the University of Sao Paulo in 1934. At that time, Prebisch had not yet begun to make use of the center-periphery framework, and his first use of it seems to be at a meeting at the Banco de Mexico in 1946 […] Braudel's Mediterranean, according to him, was chiefly composed while he was in a German prisoner of war camp and he published the work after the War. So Prebisch probably was not familiar with Braudel's work at the time he began using a C-P terminology".

[57] In other words, I am proposing in this section a sort of explanatory route through the works of Braudel and Prebisch before reaching the global system analysis theory. This connection between the different authors is not historical or biographical in nature. Of course, Braudel and Wallerstein wrote about each other, but the association between them and Prebisch and ECLAC structuralism, most probably, was possible by the mediation of other authors and variants of global system analysis, as could be the case of the Egyptian author Samir Amin.

[58] The economic structuralism perspective is a central approach between the 1950s and 1960s. Following Love (2005: 116), the structuralism perspective was unique, because "its embedding in an

My argument proposes to understand the central notion of center-periphery in Prebisch's work in a dual sense: i) as a unifying form of description, and ii) as a principle of explanation. Furthermore, this twofold description is only possible in a social science explanatory context where the whole world has been previously articulated by a narrative concerned with long processes in wider regions, which is exactly the description made of Braudel's work in the last section by highlighting an enlarged history and geography.

The aforementioned process in the social sciences can be tracked with reference to the new historical perspective developed by the French Annales School, which is very concerned with the research of geographical articulations. Nevertheless, the influences of this novel European historical perspective were not at all a reference to the work of Prebisch. This Argentinean economist born in Tucumán has no need to discuss the historical construction of a "*Weltwirtschaft* as a *Welt für sich*," in the words of Braudel (1985). The object of research in the case of Prebisch was already given: the international trade market, a very well-established global market, articulated for years as a factual reality with a clear scope and influence. In other words, the object of research was, in a way, already constructed in Prebisch's case, and it was his privilege to advance the analysis of its structural articulation[59][60].

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international research institution enjoying direct contacts with economic decision makers, advisors and other researchers in national banks and finance ministries […] CEPAL was responsible to its member governments, and owed much of its influence to building a solid contemporary and historical database for the region and its component countries. *Thus it was possible to compare the growth and development of all the republics in a consistent framework, in many cases with measures of income distribution and poverty becoming available for the first time*."

[59] The use of the word *structural* is not arbitrary; on the contrary, it reflects the core of Prebisch and ECLAC study. "En el análisis de la región realizado por la CEPAL, Estudio Económico de América Latina, 1949, dirigido por Prebisch, y en publicaciones posteriores, la organización señalaba los rasgos negativos inherentes a la economía de la periferia: desempleo estructural, desequilibrio externo –en parte debido a los altos coeficientes de importación- y deterioro de los términos de intercambio" (Love 1996a: 391). In the analysis of the region conducted by ECLAC, Economic Survey of Latin America, 1949, led by Prebisch, and in subsequent publications, the organization [ECLAC] noted the negative traits inherent to the periphery economy: structural unemployment, external imbalance -in partly due to high import ratios- and deteriorating terms of trade (Love 1996a: 391). Translation by the author.

[60] The work of Toye and Toye (2003: 437-438) evinces the relevance of the Prebisch-Singer thesis, because "it implies that, barring major changes in the structure of the world economy, the gains from trade will continue to be distributed unequally (and, some would add, unfairly) between nations exporting mainly primary products and those exporting mainly manufactures. Further, inequality of per capita incomes between these two types of countries will be increased by the growth of trade, rather than reduced."

In the case of Braudel, my interpretation considered two main events of his life to initiate the argumentation, which were: his time in Algeria as a teacher and the period spent in prison in Germany during the Second World War. In the same sense, it is possible to determine the events that occurred in and strongly marked Prebisch's life.

While Braudel taught in Algiers, is highly probable that Prebisch was teaching at the Buenos Aires University and starting his work for the Argentine Agrarian Society[61]. At the time, the Buenos Aires University was a benchmark for economic study in Latin America; it was especially concerned with economics theory and very loyal to the doctrines of "comparative advantage in international trade," as proposed by David Ricardo, Stuart Mill and Alfred Marshall, among others. This theoretical perspective became an "economic conviction," which lasted until the end of the 1920s, when the spectacular Argentinean economic growth slowed and found itself in a very subordinated position on the global market as a consequence of the decline in trade. This situation was very difficult for producers and exporters of raw materials of all countries involved.

It was from his work at the Argentine Agrarian Society that Prebisch earned a scholarship to study economic statistics in Australia. In the words of the historian Joseph Love, this life episode "[gave] him a broader perspective of the international economy."

"[…] Two years later the Sociedad Rural sent Prebisch to Australia, where he studied statistical methods related to stock raising, and presumably, he also obtained a broader perspective on Argentina's position in the international economy. By 1925 he was both a teacher at the university and an official in the Argentine government´s Departments of Statistics […] Thus, from his earliest professional activities, Prebisch gained an appreciation of the international economic system." (Love 1980: 47)

Another situation, from which Prebisch gets a strong impression of international trade systems and their function, was the negotiation between Argentina and England in 1933. This negotiation called the "Roca-Runciman Treaty" took place after the World

[61] The literal translation from the Spanish "Sociedad Agraria Argentina."

Monetary Conference in London and the Second International Monetary Conference in Geneva. Prebisch is confirmed to have participated in both conferences. This means the young Argentinean economist was in London dealing with world monetary institutions while Braudel became a prisoner in Germany.

"After war broke out in 1939, the British government played its monopsonistic position to yet greater advantage in negotiations between the Bank of England and Argentina's Central Bank, led by Raul Prebisch. One can easily surmise that Argentina's protracted and notorious dependency on her major trading partner left a lasting impression on Prebisch. It is also worth recalling that the Argentine government made great sacrifices to retain its credit rating by paying its debts; perhaps Argentine statesmen were overly influenced by the smashing success, before the Depression, of export-driven growth." (Love 1980: 49)

The notion of center-periphery according to Joseph Love started to be used by Prebisch in 1946, when he took part in the inter-American meeting of central bankers in Mexico City. This notion was systematized in the book published by ECLAC, "El desarrollo económico de América Latina y sus principales problemas," in 1949[62]. It is in this book that the notion of an industrialized and hegemonic center and a periphery that is agricultural and dependent appears explicitly. (Love 1996a)

In order to describe the influence of the center-periphery notion in spatio-temporal restructuring, two questions should be answered: What is the geographical description made by the center-periphery framework, and what are its conceptual origins? And which explanatory principle governs the relation between center-periphery, and how is this principle connected to a temporal description?

4.3.1.- Origins and Geographical Description of the Center-Periphery Analysis

As far as the first question is concerned, the center-periphery analytical framework has its roots, as the authors here referred may agree, in Werner Sombart "Der moderne Kapitalismus" (Sombart 1902). However, while this work may point the way, it cannot serve as a model of the modern world economy's organization, for the

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[62] In English, "The economic development in Latin American and its principal problems."

reason given by Joseph Love (1996a). The German authors identified different National States' roles in the world economy articulation but did not strictly express a structural condition. The works of Joseph Love and also of John and Richard Toye proposed that Prebisch's primary influence might not be the European economic literature extended into Latin America at that time, as were the works of the Romanian Mihail Manoilescu or the French François Perroux, both of whom had a major influence on intellectual circles in Brazil around the 1940s.

"We must distinguish a capitalist Center —the central capitalist nations— from a mass of peripheral countries viewed from that Center; the former are active and directing, the latter, passive and serving. England constituted the capitalist Center in the first half of the nineteenth century; later, in the longer period of High Capitalism, Western Europe [joined England]... Finally, in the last generation, the eastern part of the United States has moved up [to the Center]." (Sombart 1902 quoted by Joseph Love 2011: 26)

The main reference made by Love and Toye, may be in the work of the German-Chilean economist Ernst Friedrich Wagemann (1884-1956)[63] with his book "Struktur und Rhythmus der Weltwirtschaft" (Wagemann 1931)[64]. It is in this book that the notions of peripheral cycles and central cycles are presented. Nevertheless, the question regarding the incorporation of these cycles in a particular economic geography still remains open. The work of Wagemann seeks an explanation of the international economic phases of growth-expansion and stagnation-decline. In this sense, an approach to a geographical analysis may be found in his distinction of four

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[63] Ernst Wagemann was born in Chañarcillo, Copiapó Region and held a professorship at the Economic Institute in Chile between 1949-1953. Besides his work as an economist in Germany between 1923 and 1945, and his connection with the Nazi regime, his relevant work, regarding the perspective this thesis is engaged in, in the founding of the Economic Institute of the University of Chile makes his influence on Raúl Prebisch possible.

[64] In words of John and Richard Toye (2003: 440), "Central European thinkers had advocated state-led industrialization in the 1920s on the grounds of unequal exchange between groups of nations at the center and the periphery of the world economy. This idea, particularly as used by Werner Sombart, was introduced to Latin America by Ernest Friedrich Wagemann in his *Evolución y ritmo de la economía mundial* (Wagemann 1931 [1933])".

types of economies: i) Freie Bedarfswirtschaft ii) Freie Ertragswirtschaft iii) Gebundene Ertragswirtschaft iv) Gebundene Bedarfswirtschaft[65].

"[Wagemann's] book is to discover and to give proper weight to the influences at work that tend to make the fluctuations of business activity an international problem." (Weidenhammer 1932: 316)

Following Weidenhammer, Wagemann's books as well as the distinction of the different types of economies are both oriented toward an understanding of the cyclical condition of the economies and its recurring fluctuations. Therefore, they are not directly connected to the recognition of a structural principle for the organization of the world between center and periphery. In this narrative, the distinctions between *free* in opposition to *organized*, and *use* in contrast with *change*, are the interrelated dimensions that define the predominant geographical distinctions. In some way, Wagemann's account could be closer to another typical geographical differentiation concerned with first-, second-, and third-world economies, but it lacks a structural relation between them.

It is only under the combined and delayed effects of the First World War and the Great Depression that the circumstances that strongly harmed international terms of trade emerged. It was in the late combination of both phenomena, and not exactly at the time of war, when the second type of countries (free economy based on production for profit) experienced the deep economic crisis, as was the case in the United States of America. Nevertheless, the industrial reorientation of the big economies during the time of war produced an early impact on economies of the first type (free economy based on production for use). These economies oriented toward the production of commodities and raw materials observed a deterioration of their welfare situation. In the terms proposed by the authors referred to here, there was no such economic stagnation under those circumstances. To use a proper concept; we should talk about a *structural economic crisis*. This means that, even when the countries producing raw material expand their production and increase their

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[65]In English: i) free economy based on production for use, ii) free economy based on production for profit, iii) organized economy based on production for profit iv) organized economy based on production for use. Translation by the author.

competitiveness, the situation of interchange becomes structurally uneven regarding the industrial products, and the poorness and deficiency in the population becomes chronic, too.

As a further interpretation, it is possible to propose that only around the 1940s did the conditions of the world economy of the geographical difference between center and periphery become evident. Nevertheless, the origins of Prebisch's use of the notion "center" and "periphery" remain obscure, even to himself:

"En 1977 Prebisch no recordaba cómo se le había ocurrido utilizar los términos centro y periferia. Carta de Prebisch a Love, Washington, D.C., 29 de Junio." (Love 1996a: 392)[66].

At the middle of this issue and at the point of convergence between international trade conditions and geographical relations lies the theme of development. The center-periphery description is an explanatory principle that highlights the possibilities/impossibilities of socio-economic development of the National State through an analysis of the relation between central industrial countries and peripheral agricultural ones. The analysis is novel and remarkable in that it organizes the explanation around relational aspects at the international or global level (Cardoso y Faletto 1990) and not inside the National State borders. Nevertheless, the integration of these theories into public policy has not always been successful. The most typical case was known as "import substitution," which should have led to peripheral industrialization; however, no such industrialization took place.

The center-periphery notion becomes a principle of explanation in the geographical dimension, because it does not only describe an economic reality but moreover organizes and structures conditions to understand: i) economic development and underdevelopment, ii) the relational aspect of the interchange at the international level as a necessary condition and not only a random effect, and iii) a pattern of restriction and opportunities for further transformation.

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[66] "In 1977, Prebisch did not remember how he had thought about using the concepts center and periphery. Letter from Prebisch to Love, Washington, D.C., June 29th." Translation by the author.

4.3.2.- Explanatory Principle and Temporal Condition of the Center-Periphery Analysis

To answer the question of the temporal condition of the center-periphery analysis, it may be useful to determine whether the temporality is essential to this perspective or not. To better engage this discussion, the concept of cycles and structures in the same center-periphery concept, discussed in the preceding theoretical approaches, will be utilized.

The notion of cycles, as they are primarily found in Wagemann (1931 [1933]), proposes a sort of rhythm in the short run as a recurrent temporality. This rhythm, which is indeed the first intuitive incorporation of time in economic and geographical analysis, is an explicit phenomenon for authors dealing with the changing pattern of stability in economic arrangement. On the other hand, the center-periphery concept proposes stability as its temporality in an extended historical span. The stability in an extended period of time is the basis for the consolidation of the long-lasting geographical form. In this sense, spatio-temporal structures are not intuitive or directly perceived, but on the contrary, the stability can only be achievable by the observation of long periods of time in which variations are dismissed. Conversely, spatio-temporal cycles appear directly to the observer when he or she approaches the dynamic nature of the economical phenomena.

	Cycles	Structure
Temporal condition	Middle-range temporality. Stability inside a contained variation between dichotomous alternatives.	Stability in the long-run temporality
Spatial condition	Countries clustered together according to the role they play in the global economy. Different ideal types with limited integration between them	Integrated and interconnected global scale with countries playing different roles inside a macro-narrative
Phenomena observation	The idea of lineal progress is criticized as well as the random character of events. Cyclical dynamics appear as a constant movement and stability between the micro- and macro-scales.	The micro-events are overcome as well as the cyclic character of development. The long-lasting structure is proposed as the only real phenomenon.

Table 3. Cycles and structures from the perspective of spatio-temporal restructuration.

The structure is only noticeable when the vision on the particular fact is blurred, and its random condition is overcome by the emphasis on long-lasting stabilities. The temporal notion of cycles is at the midpoint between the micro-facts and the big

structures, because cycles are not ruled by every variation, and together they represent a stable oscillation between conditions.

In a closer account the temporality of cycles is the recurrent movement inside a limited set of options. In a metaphorical image, something oscillates recurrently between two possible states. This is exactly the meaning given by Joseph Love for the use of the concepts *central cycles* [zentrische Konjunktur] and *peripheral cycles* [periphere Konjunktur] in Wagemann's work.

"[Wagemann used] central cycles to designate money incomes movements within a given country and the peripheral cycles to designate capital movements at the international level." (Love 1996b: 134)

As could be seen, Prebisch and Wagemann differ in their use of the concepts of "central" and "peripheral": For Wagemann, these two terms are connected with a cyclical temporality, while for Prebisch they start to be connected with the emergence of a spatio-temporal structure. This latter sense of the center-periphery concept inside a global structure, perhaps not totally explicit in Prebisch's work, is the connotation restored by the dependence theory or the global system analysis. Nevertheless, it is worth observing that the notion of center-periphery was already widespread in business circles at that moment, and resamble the situation occurred with terms such as *glocal* and *glocalization* (Khondker 2004) in the last decades. In this last sense, Joseph Love proposes elsewhere "The concepts of center and periphery were already in banking literature by 1940, and Prebisch may have simply given them a Sombartian meaning in building his theory" (Love 1980, 1996a).

From a temporal perspective, the notion of economic cycles is rooted in a movement among periods of stability in terms of both economic growth and decline. This notion of cyclical movement within a predetermined set of possible stages has no direct connection with the notion of structure. Major theoretical progress is required to prove that what is normally perceived as a cycle in the short run may be different when the spatio-temporal frame is expended. As such, the cycles show the form of a structure in the long run.

The center-periphery represents theoretical progress, because it offers a principle of explanation that organizes different temporalities in terms of: i) unstable economic arrangement in the short run, ii) cyclical character of monetary flows and investments in an extended period, and iii) structural conditions of interchange in the long run; all of these three temporalities inside a coherent narrative.

Together, these considerations support the notion that there is a pattern of development in the social science explanation – one that runs across space and time in the form of restructuration. The expanded and decentered geographies, which are only possible in the long run, overcome singular facts and their inherent instabilities.

Consequently, it is possible to raise stable spatio-temporal structures that frame social action. From the standpoint of the French Annales School, the long temporality and the wide geographies appear as frameworks for social action. The individual is the point of encounter of time and space, and the actions are limited and averaged by the influences of both categories – time and space. For Latin American structuralism, the center-periphery concept appears connected with the national integration to the international market. The cyclical condition of the economic development appears as a critique of the extended idea of lineal progress. But the perspective of center-periphery becomes more radical and approaches the fact that the cycles in the long run comprise a spatio-temporal structural formation characterized by the uneven geographic and economic integration.

4.4.- Excurse: Global System Analysis as Epistemological and Macro-Level Spatio-Temporal Restructuration

Overview

A theoretical perspective closer to the approach of spatio-temporal restructuration can be found in the global system analysis proposed by Immanuel Wallerstein, Samir Amin, Giovanni Arrighi, and Andre Gunder Frank. The argument of this section is that the double role played by the emerging global system as a social-historical construction and simultaneously as an interpretative perspective of analysis, is only possible thanks to an earlier process of spatio-temporal restructuration. The global system analysis can be understood as a particular form of spatio-temporal restructuration that is mainly concerned with the social sciences approach.

The excurse proposed here seeks to answer the double question of how the global system analysis can be both a spatio-temporal restructuration and an incomplete spatio-temporal restructuration. Global system analysis can be seen as the most relevant spatio-temporal restructuration that social sciences have utilized to make sense of higher geographical scales and long-lasting history. However, it is incomplete when it comes to dealing with the lower levels of spatio-temporal articulation in terms of social actions, people's practices and interpretative schemes of the world.

The analysis in this excurse mainly concerns Wallerstein's work. First, it will examine global system analysis as a spatio-temporal restructuration in the social sciences' way of knowing. Second, the focus will be on global system analysis, which is a complete spatio-temporal restructuration in the higher scales but incomplete in the lowers scales.

4.4.1.- Global System Analysis and the Spatio-Temporal Restructuration

The perspective of the global system analysis (GSA) proposed by Wallerstein shows important similarities with the argumentation offered in this chapter. Omitting an explicit reference to this social research orientation may represent a shortcoming in the exposition. Nevertheless, to propose an accurate and complete revision of GSA may present an excessive task for this thesis. Therefore, an excurse is offered in a very restricted sense to show GSA as a particular form of spatio-temporal restructuration.

Looking into the book "*World System Analysis an Introduction*" (Wallerstein 2004), and especially in the first chapter "Historical Origins", the American author is very explicit to mention the social sciences' disputes that *set the scene* for the rise of the global system perspective of analysis between the years 1940-1970[67]. The book mentions four debates: i) the concept of core-periphery developed for the Economic Commission for Latin America (ECLAC) and an elaboration on the "dependence theory"; ii) the discussion about the concept of "Asiatic mode of production" among Marxist scholars; iii) the dispute about the origins of modern capitalism relayed in internal or external variables to the National State in the Anglo-Saxon economic history; and iv) the triumph of the Annales School's perspective on history with its emphasis on the *longue durée* or *total history* (Wallerstein 2004: 11-13).

From these debates, Chapter 4 has reconstructed the perspective of two of them: the Annales School perspective of total history with a special focus on the work of Fernand Braudel, and the approach to the deterioration of the terms of trade proposed for the Economic Commission for Latin American in the work of Raúl Prebisch about core-periphery. In a similar way to Wallerstein's work, this chapter suggests that the social sciences' analytical perspective, following the Second World War, received relevant and creative influences from Braudel's historical and Prebisch's economic

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[67] In general, Wallerstein considers the time span for the emergence of the GSA to be the period between the end of the Second World War and the social revolution of 1968. In this account, and probably as a way to simplify the argument, the period offers the year 1970. To see the relevance of the social revolution of 1968, see "World System Analysis" (Wallerstein 2000 in Denemark et al.): "World system history the social science of long-term change.". For a more personal and biographical perspective, see "Interview with Immanuel Wallerstein" (Williams 2013), especially the last part of the interview when Wallerstein addresses the questions "Do you think the development of world-systems analysis would have been possible if it weren't for the revolution of 1968?"

perspectives[68]. The main argument proposes that the social science explanation constructs its research object: first, by a process of *enlarging and decentering* the inherited historical and geographical frameworks, and second, by a method of *capturing a logic of function* inside this novel and expanded historical and geographical boundaries. The chapter does so not with the intention of proposing a particular epistemology, as would be the case with the GSA perspective, but as a necessary strategy in an effort to advance the research about the phenomena of spatio-temporal restructuration. In the same way, it is possible to argue that Wallerstein's approach is mainly the problem of a scholar making sense of social reality. In this sense, social reality is not wholly contained in the National State's spatio-temporal perspective, and therefore, another framework should be created for the purpose of research.

By contrast, this chapter proposes that the global systems and the national level perspectives of analysis are both constructed. Moreover, they are not only constructed by the scholars' definitions that intend to analytically frame social facts, but primarily by social actors' interests and motivations, which are continuously reorganizing the spatio-temporal schemes. In that sense, spatio-temporal restructuration is not exclusively a scholarly discussion about which spatio-temporality would be the right one to make sense of social facts. Spatio-temporal restructuration is an analytical device, sensible to apprehending how social facts are constantly creating, recreating or transforming the spatio-temporal framework for people's experience.

As was noted in the overview, there are two underlying forms to link the GSA perspective to the discussion about spatio-temporal restructuration: i) GSA as an epistemological spatio-temporal restructuration, and ii) GSA as a complete spatio-temporal restructuration in the higher social levels, and an incomplete spatio-temporal restructuration in the lower social level. Following Wallerstein's discussion about social sciences' mainstream organization and transformation in the periods of 1850-

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[68] "The *conjuncture* of 1945-1968, it was favourable to Annales with the particular Braudelian emphases: more economic than social history, history that emphasized the so-called 'early modern period,' history informed by an analysis of the multiple social temporalities, historiography that 'did not hold Marxism at a distance'" (Wallerstein 1982). But this is also the case for the GSA, because the particular form of history presented in Braudel's work allows a dialogue with the economic analysis of Prebisch, which evolves to a more political economic stand. This historical conjuncture that acknowledges the dialogue between history and economy is at the basis of the GSA perspective.

1945 and 1945-1970, the scope of the first perspective will be explained. The second perspective will be addressed with reference to the discussion between the nomothetic and the ideographic perspectives, and their different spatio-temporal scopes[69]. Both discussions are informed by the critical perspective Göran Therborn made to Wallersteinian GSA in "Time, Space, and their Knowledge: the Time and Place of the World and Other Systems" (Therborn 2010).

4.4.2.- Global System Analysis as an Epistemological Spatio-Temporal Restructuration

Wallerstein has proposed elsewhere (Wallerstein 1991, 1995, 2000, 2004) that until 1945 the social sciences were organized by a strong disciplinary distinction, which had been inherited back from the 19th century. The disciplinary delimitation, in the perspective of the author, obeys two double sets of distinctions: "past/present" and "Western World/others".

In the period between 1850 and 1945, the disciplines were structured in the following way: the past was the domain of history, and the non-Western world was divided into the study of primitive societies reserved for anthropologists, and "higher" civilization given to the Orientalist. To some extent, the Western World was the only place where history appears as such. The modernization process was key to making a distinction between the past and the present. Therefore, only in the modern present, located exclusively inside the limits of the Western World, was a differentiation between autonomous fields required. Economy would reserve the domain of the markets; political sciences isolate the analysis of the State, and sociology the study of civil society[70].

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[69] Perhaps contradicting the common sense, the GSA as epistemological spatio-temporal restructuration would not be informed directly by Wallerstein's epistemological discussion about nomothetic and ideographic epistemologies. This situation should no consider a mistake or a disregard made by the analysis here presented. This decision found its ground in the fact that Wallerstein discussion about the two different epistemologies are directly linked with the solution proposed by Braudel's in the *longue durée,* as the only spatio-temporality where valid knowledge could be acquired (Braudel 1958). Here the reason why the discussion of these two epistemologies leads to the construction of a particular spatio-temporality for the social analysis.

[70] Wallerstein in his paper *What we are bounding, and whom, when we bound social research* (Wallerstein 1995: 850) proposes to understand sociology as a *catch-all label* to organize what economists or political scientists were not interested in studying.

This strong disciplinary distinction, in the account of Wallerstein, was challenged after 1945 by two facts: i) the geopolitical "self-assertion" made by the non-Western World, which makes an approach to this social reality only through anthropological means useless, and ii) the expansion of the world university, which supposes the combination of disciplines by scholars and doctoral candidatesseeking for the expansion of *acceptable* research domains (Wallerstein 2000).

The author proposes as one possible solution to the abovementioned twofold social sciences breakdown the emergence of the theories of modernization framed by the idea of development. This solution is not a radical transformation of the previous disciplinary situation, because in general terms, only call for a territorial extension of the disciplines concerned with the modern Western World – economy, political sciences and sociology – to the regions in which modernization process should arrive soon. From another perspective, the answer does not mean a *territorial enlargement* as was presented in the previous section of this chapter in reference to Braudel's or Prebisch's work. On the contrary, it is only an extension, because it did not suppose to leave the National State as the correct unity of analysis. In other words, no *decentering* process occurred.

The period between 1945 and 1970 can be considered the twilight of the strong disciplinary division in social sciences. In a perspective that considered cyclical transformation, as is the case with the Wallerstein approach[71], the period of transition simultaneously gathers old and new responses. This meant that after the Second War World, inside the university system, new trends in research cohabited with old approaches. Here we find a plausible explanation as to why Wallerstein, while referring to the Annales School in the times of Febvre and Bloch, would say: "[…] in 1929, they were marginal scholars in a marginal university." (Wallerstein 1982: 8). A different historical situation faces the GSA, because after the student revolution of 1968, the criticism of the hegemony of centrist liberalism and the skepticism about classical political and economic explanation were the reasons for it to emerge (Williams 2013: 207).

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[71] Without a deep analysis of the temporal structure of the GSA, it is still possible to highlight at least three temporalities expressed by Wallerstein: cyclical rhythms, secular trends, and a period of bifurcation (Wallerstein 2000).

The attempt to avoid being trapped by the same oversight that Wallerstein highlights in his criticizers, whenever they disapproved what the GSA perspective explicitly postulates as its basic premise, will be supported by the claim that the global-system is a central spatio-temporal restructuration at the epistemological level.

Wallerstein was very concerned with the transformation experienced by the social sciences. When trying to make sense of this situation, we should not forget that he was appointed president of the Gulbenkian Commission on the Restructuring of the Social Sciences (1993-1995)[72]. From his perspective, it is possible to derive that the social sciences between 1945 and 1970 performed ambivalently. On the one hand, they were still strongly influenced by a reductionist perspective with a focus on the modern Western present. Social sciences could go far into the past or far into space, but they could not be released from the National State as an exclusive unit of analysis. On the other hand, social sciences began a fruitful *enlargement* and *decentering* process in search of more accurate explanations of the socio-economic contradictions between developed and underdeveloped countries. Being more precise and using the GSA terminology, the clarification of the process that leads to the periphery countries' submission to the core of the global system.

In this context, Wallerstein's proposal to forward social sciences engaged the same route traced by Braudel's changing unit of analysis from the National State to the global system. The social reality could not be apprehended in the spatio-temporality of the National State and required a new spatio-temporal framework. Braudel recognized a great similarity between his later studies about the emergence of a world-economy and Wallerstein's global system, and he very explicitly states that beside one or two points in which they may differ, the points of view are identical (Braudel 1985 [1986]: 87). Despite the similarities pointed out between these two authors, it is still possible to make some distinction between them. For Braudel, the

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[72] From the summary of the Gulbenkian Report, "Opening the Social Sciences" (Wallerstein 1996): "The report first explores how social science was historically constructed as a form of knowledge and why it was divided into a specific set of relatively standard disciplines in a process that went on between the late eighteenth century and 1945. It then reveals the ways in which world developments since 1945 have raised questions about this intellectual division of labour and have therefore reopened the issues of organizational structuring that had been put into place in the previous period. The report goes on to elucidate a series of basic intellectual questions about which there has been much recent debate. Finally, it discusses in what ways the social sciences can be intelligently restructured in the light of this history and the recent debates." Source: http://www.sup.org/book.cgi?id=792

world economies already existed in Europe in the Middle Ages and in ancient times, whereas Wallerstein locates the global system only from the 16th century onward. This differentiation shows that even though both authors arrived at the idea of a world economy or a global system that encompasses the whole world between 1974 and 1985, the explanation submitted in each case shows a temporal differentiation. Braudel organizes the explanation from the evolution of different world economies, in other words, from the past to the present, while Wallerstein observes the current world system and thereafter, he search for its origins in history, going from the present to the past.

In another level of comparison, Braudel's more dynamic perspective of world economies always remains engaged with the historical construction of enlarged and autonomous regions. The global system of Wallerstein appears more detached from the historical accounts that construct the situation in which a global-system articulates the whole world. In this sense, the actors' temporalities that make the current states of affairs appear with low relevance emerge. In this sense, the critiques of Therborn is clear when he suggests that Wallerstein seems concerned only with the scholar's time while forgetting the actor's times. Following his argumentation, scholar's time is the one used for social sciences research and knowledge production, while actor's time is the temporal orientations of human actions. In this sense, the following sentence of Therborn is very strong "No scholar account is a full historical account" (Therborn 2010: 270).

Wallerstein's articulation of the global system is the spatio-temporal restructuration that social sciences require, leaving behind the strong disciplinary distinction that was inherited, with some small variations, from the late-19th century. In this regard, the author's use of historical economic data to portray social reality is especially clear. This is not the case with spatio-temporal restructuration, because it joins the actors' orientation toward time and space maintenance and transformation to the social analysis perspective. In this sense, spatio-temporal restructuration is not confined by macro-data, and it is open to make sense of situations in which social action re-structures time and space.

4.4.3.- Global System Analysis as Macro-Level Spatio-Temporal Restructuration

The epistemological stand of Wallerstein can be divided into two central concerns: i) the social sciences status and the specific spatio-temporality required to approach the global system as the valid unit of analysis for social sciences, and ii) the consolidation of a spatio-temporality in which the misleading orientation of the social sciences toward nomothetic or ideographic epistemologies is avoided.

The first issue was addressed in the previous section when it was postulated that GSA emerges as the social sciences' solution to the problem posited by a sturdy disciplinary demarcation and the constant restriction of research to the National State level. The more Wallerstein's perspective gains strength as a scholarly approach, the more it loses explanatory yield as actors' orientation. The second issue will be associated in the following section with Wallerstein's reference to the Annales School's proposal, especially in the work of Braudel, to overcome the antinomy between nomothetic and ideographic epistemologies.

Nomothetic epistemology is a way to proceed in social science toward the acknowledgment of universal laws that explain social reality maintenance and transformation. By contrast, ideographic epistemology is a social science perspective that places focus on small empirical facts as the only valid terrain for research, limiting explanatory capability to the description of events. Braudel's perspective was to consider these two parts of the antinomy as a misleading position for social science explanation. The ideography Braudel called histoire événementielle was discarded by his famous sentence "events are just dust." From the other side, nomothetic was proposed by Braudel as la très longue durée, and if it was possible, it "can only be the time of the wise man."

It is important to notice that according to Wallerstein, Braudel's critics are oriented toward particular groups of authors that in his view more or less personify these two misleading routes in which the social sciences seem to be trapped: the case of Leopold von Ranke in the idiographic perspective and Levi-Strauss in the nomothetic

approach[73]. In this context, the solution proposed by Braudel is brilliant, because he introduced into the discussion of these two opposed epistemologies the spatio-temporal dimension on which they both rely. The ideographic perspective, as Wallerstein explains, is the concentration on the infinitely *small time and space*, while the nomothetic is the concentration on the infinitely *small in scope and eternal in time* (Wallerstein 1991:12).

From the perspective presented in this section, the ideographic stand is just the focus on the quotidian and low scales of time and space of peoples' events, while the nomothetic stand is the focus on the eternal and the high scales of time and space of the social sciences laws. In this context, Braudel's answer, according to Wallerstein, was to concentrate the research in large spaces and long times, using the double temporality of the slow structural change and the cyclical conjunctures inside the long time span.

The argumentation appears very plausible with regard to the nomothetic orientation, but in some ways, it appears a bit less satisfactory for the case of the ideographic standpoints. Eternal laws are in a spatio-temporality that exceeds any real structuration of time and space[74]. Events, if they become the only aim of social research, will definitely imprison social explanation in a very low spatio-temporality. But this situation appears only if events are the only legitimate concern of social inquiry. In any case, the strategy of the Annales School was to open up space for a higher level of spatio-temporal articulation in social research, aside from the very small levels and the extremely higher ones.

It is exactly in this sense that it was proposed to understand the global system as a higher spatio-temporal restructuration. Here, the argumentation should retrieve the connection that Wallerstein makes between National State and social systems.

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[73] All authors discussing Braudel's approach do not agree on these two opponents. It seems there is some evidence to think that Braudel rejected a historical perspective rooted in Newtonian sciences, and that may be the case of Ranke's approach. Dursteler (2010: 70) makes the following comment: "'Histoire et sciences sociales: la longue durée,' which developed more fully his idea of the *longue durée* in response to the challenge of Levi-Strauss's influential ideas on the primacy of anthropology among the social sciences.".

[74] As we present in the chapter three the imaginary spatio-temporalities are very relevant in the construction of social explanation. See this argumentation in the section "Moving beyond a de-temporalized and de-territorialized social explanation."

According to him, every social system has always been a world system in the sense that it encompassed and extended the autonomous region[75]. If we observe the spatio-temporality of this definition, the implication is that in the temporal dimension every system is a historical and slow construction, and in the spatial dimension every system is a geographical and extended articulation. Both dimensions of the definition are self-definition of the system. Following the lead of Wallerstein, it seems there is no problem with the existence of National States as a unit of analysis, as long as they are considered within the major structure in which they properly operate: the global system.

Global system as an epistemological spatio-temporal restructuration is a construction of the long temporalities and wide spatialities used to understand social reality but with a special focus on the *world-economies*, using the Braudelian notion. In the same way, Wallerstein's perspective is strengthened, as higher levels of spatio-temporal restructuration lose explanatory payoff in the lower levels. This is not a shortcoming of the explanation of Braudel's Annales School or Wallerstein's GSA perspective. On the contrary, this situation responds to the historical conjuncture at which both theoretical perspectives emerge.

The spatio-temporal restructuration perspective, conversely, offers an opportunity to understand the restructuration not only in the higher but also in the lower social levels. The spatio-temporal restructuration of wide scope has been gradually forged over time, in a way similar to the capitalistic world and the global system. At present, the global system appears to be a long-lasting spatio-temporal regime, but this should not obscure the influence of single actions and interpretation in its construction. The transformation and maintenance of spatio-temporal regimes are always limited for social action, in the same way social actions have limited influence in the spatio-temporal regimes. The micro-spatio-temporal restructuration in a comprehensive fashion would be the focus of the next chapter.

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[75] Wallerstein (2000) proposes: "all historical system were world-system, using the word "world" to indicate a large region, and not necessarily the entire globe" in a much more clear movement toward the notion of economic-world, presented by Braudel in "La Dynamique du Capitalisme" (Braudel 1985).

4.5.- Chapter Four Summary; Enlarged Spatio-Temporal Frameworks

Chapter 4 presented an explanatory route that challenges the underlying assumption of time-space stability in the social science explanations. This route enables the researcher to understand the emergence of long histories and wide geographies as primary forms of spatio-temporal restructuration in the social sciences. This perspective has been called macro-level restructuration over the course of the thesis argumentation and only becomes possible by an epistemological process of enlarging and decentering the inherited historic and geographic frameworks of analysis.

The enlarged and decentered perspective of analysis was introduced with the initial reference to the colonial period in Latin America. The emergence of a global world in the 17th century is presented as a horizon that strongly confronts representations of the social sciences. In other words, during the 17th century, the emerging global characters embodied by individuals such as Thomas Gage and Sister Juana de Maldonado y Paz can only be understood in their totality from a theoretical perspective that re-articulates the spatio-temporal structure at the macro-level.

Perhaps the first author that genuinely confronted this situation was the French historian Fernand Braudel, particularly in his work "The Mediterranean and the Mediterranean World in the Age of Philip II," first published in 1949, and "The Dynamic of Capitalism," published in 1985. From Braudel's perspective, the notion of spatio-temporal restructuration is informed by three considerations: i) Expanded spatio-temporal regimes exist beside daily action; ii) this spatio-temporal regime of a long and wide reach has been slowly constructed; and iii) human action is a point of encounter from the structural and changeable character of spatio-temporal regimes.

In the case of international markets, Raúl Prebisch sought to show how a logic of explanation could be derived from within macro-narratives. In contrast to Braudel's work, that of the Argentinean economist inherited an integrated perspective of the world system in terms of commercial interchange. The supposed cyclical condition of economic development inside a continuous process of progress is challenged by the author with his proposal of a global structure organized in an underdeveloped periphery and a developed core. Spatio-temporal restructuration from this perspective

recovers three other considerations: i) The spatio-temporal regimes have a structural condition; ii) temporal as well as spatial transformation in the short run or the local scale are not immediately connected with the structural conditions of spatio-temporal regimes; and iii) macro-spatio-temporal structures only partially or selectively accept influences from lower scales.

Finally, the excurse on global system analysis clearly shows that macro-spatio-temporal restructuration is only one possible level of articulation in social sciences explanation. Spatio-temporal restructuration appears clearly as the object of research under the theoretical and empirical construction of the global system. Nevertheless, the account of this analytical perspective, in the words of Wallerstein, also shows that another route of analysis could be found at the micro-scale. This particular route will be explored in the following chapter.

For this thesis project, the chapter acknowledges that spatio-temporal restructuration of the social sciences appears primarily in the construction of enlarged narratives that try to make sense of regional and global interconnection. This macro-level approach appears in the discipline of history but also rapidly influences the political economy analysis. Wide spatialities and long temporalities are one possible way to frame the spatio-temporal regimes of society.

Chapter Five: Theory III
Spatio-Temporal Restructuration from the Micro-Level: Spatio-Temporal Regimes, Arrengements and Everyday Life

Chapter Overview

The social sciences approach to the dynamics of spatial and temporal restructuration has been engaged mainly from macro-perspectives regarding regionalization and globalization. From this point of view, most researchers do not question the multi-level conditions in which spatio-temporal frameworks are constructed, and thus, the macro-scale deceptively appears as the only right way to conduct theoretical and empirical research.

This chapter addresses the debate regarding the construction of spatio-temporal regimes from the micro-scale. This construction is proposed as a complementary route to the macro-spatio-temporal restructuration analyzed in the previous chapter. As a way of introduction to the discussion, a brief reference to Julio Cortázar's fictional narratives of *highways* is presented as an example of time-space restructuration from the micro-scale. These fictional narratives illuminate two selective processes: i) the double contextualization that acts between spatio-temporal regimes and spatio-temporal arrangement, and ii) the delimitation process exerted by social regimes over the individual action in the stabilization of spatio-temporal structures.

A second section of the chapter is devoted to the theory of social acceleration developed by Hartmut Rosa from the perspective of selective spatio-temporal restructuration. Spatio-temporal restructuration will complement the macro-orientation of the social acceleration theory with a micro-orientation perspective. Accelerated technical progress impacts and influences the form of subjectivity and society, therefore individual actions and interpretations become central elements of this analysis. The argument draws on the conceptual link between spatio-temporal regimes and spatio-temporal arrangements to develop a description of the multi-level dimension of time and space restructuration in modernity.

A third section shows the spatio-temporal restructuration from the perspective of everyday regionalization, as proposed by Benno Werlen. In this case, the theory, which offers an understanding of space as a product of action and never as a pre-existing category, is expanded to make an account of not only the territorial but also the temporal structuration processes. The section outlines analytical regularities between the study of different kinds of spaces as Werlen proposes and the different forms of spatio-temporal structuration analyzed in the thesis.

This chapter portrays spatio-temporal restructuration from the micro-scale. The interplay between the social level, called spatio-temporal regimes, and the individual level, called spatio-temporal arrangements, introduces the argumentation. The proposal of a multi-level spatio-temporal restructuration becomes the result of an analytical approach that combines general social structuration trends with different individual form of structuration over time and space.

5.1.- Micro-Narratives that Create Spatio-Temporal Regimes Over a Lifetime

Overview

This section describes spatio-temporal restructuration from the micro-scale by illustrating how it emerges from within stable spatio-temporal regimes. By using Cortázar's literary description of "highways," a threefold typology of interpretation, action, and imagination offer an analytical account of the restructuration process. This explanation highlights influences from Lefebvre's types of space: perceived, lived and conceived.

Major flexibility in the definition of modern spatio-temporal arrangement is proposed as a result of this approach. A literary entrance to micro-scale restructuration allows for an exploration of the interplay between the multilevel character of interaction within spatio-temporal regimes and spatio-temporal arrangement. Where spatio-temporal regimes are proposed as socially stabilized, spatio-temporal regimes are undertaken individually.

The central argument proposes that by simply moving the sociological explanation of time-space to the micro-scale, it is possible to observe how structure and agency interact with the stabilization of spatio-temporal regimes. This situation permits a conceptualization of regimes based on heterogeneous arrangements in lower spatio-temporal scales. Heterogeneity in this context means the spatio-temporal regimes undergo a constant process of restructuration in the form of stability as well as change; both are always the result of action and never a precondition.

The discussion begins with a consideration of different spatio-temporal structures presented in Cortázar's highways stories, and from this perspective the negotiated character of the relation between regimes and arrangement is introduced. This negotiated form of relation obeys a double process of contextualization and limitation in terms of interpretation and action. Contextualization reflects how the new "sense of place" that is created (in the case of Cortázar, around the road) must maintain the socially stabilized meaning of highway as a reference. A constant dialogue for interpretation between structure and agency is triggered. Limitation shows how the multi-level condition of novel actions performed on the highway is always socially constrained by the existing spatio-temporal regime. A continuous form of investment for change and stabilization appears at the basis of the relation between structure and agency.

5.1.1.- Novel Spatio-Temporal Arrangement Inside Stable Social Frameworks

"The August heat was increasing and sticking to the tyres, making the delay all the more frustrating. The air was infused with the smell of gasoline, wild shouting from the young men in the Simca, the glint of sunlight reflected by the glass and chrome edges, and to top it all the contradictory feeling of being enclosed in a thick jungle of machines designed to run free."

Julio Cortázar. La Autopista del Sur [The Southern Highway] in Todos los Fuegos el Fuego (1966 [1973])[76][77]

"Just write, to make from the text the highway and from every word the transit."[78] This is how Di Paola (2010) proposed to begin an interpretation of Cortázar's short story "The Southern Highway" (Cortázar 1966[1973]). This strong connection between the highway and the narrative flow, proposed by the Argentinean commenter, is never made this explicit to the reader until the end of the story. After months of rest, the infinite line of stationary cars suddenly starts to move. Amazingly, in the same way that the cars begin to move faster and faster in the narrative description, the reading of the story also seems to accelerate. The flow of reading, motivated by the need to know what will happen at the end of the story, mirrors the increasing velocity of the automobiles.

The highway's portrayal is not randomly presented in Cortázar's literature; there is another very relevant piece on this topic. "Autonauts of the Cosmoroute: A Timeless Voyage from Paris to Marseille" (2007 [1983]) shows the journey made by the Argentine author and his wife, Canadian photographer Carol Dunlop, between Paris and Marseille during May and June of 1982. Carol Dunlop died of leukemia almost a year following their travels and Julio Cortázar passed away in 1984. This biographical condition of the journey expresses existencial significance.

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[76] Most of Cortázar's works used in this section have been retrieved from electronic version of the original books. As a result, even though direct quotations are used, in most cases the page numbers have been omitted from the reference.

[77] Translation by the author from original Spanish text. "El calor de agosto se sumaba a ese tiempo a ras de neumáticos para que la inmovilidad fuese cada vez más enervante. Todo era olor a gasolina, gritos destemplados de los jovencitos del Simca, brillo del sol rebotando en los cristales y en los bordes cromados, y para colmo sensación contradictoria del encierro en plena selva de máquinas pensadas para correr." Julio Cortázar (1966 [1973]).

[78] Translation by the author.

In both "Southern Highway" and "Autonauts of the Cosmoroute," the highway narrative figure appears by showing the opposition between two spatio-temporal structures: acceleration and deceleration. The modern spatiality conceived to accommodate machines that consequently accelerate human movement is approached twice from the perspective of deceleration. In a letter Cortázar sent to the director of the motorway company in Paris (La société d'autoroute), he says, *"live for one month inside the highway"* while moving at the speed of *"two highway stops each day"* (Cortázar and Dunlop 2007 [1983]). While preparing for his journey, Cortázar requested official permission, because no car was permitted to remain on the highway longer than two days. The president of the motorway company never answered this letter.

Spatio-temporal frameworks are redefined in Cortázar's literature from a double perspective: as a *fictional narrative* and as a *significant life experience*. The highway is portrayed in an interesting way in "The Southern Highway" in two opposing senses: first, as the place for an unusual form of social contact, and second, as the context for undesirable modes of individualization. Randomly, people get together over months as the result of an overwhelming traffic jam, and in this context Cortázar portrays how the individuals slowly create social bonds, or more accurately, they begin a sort of communitarian way of dealing with the unforeseeable conditions of the situation: "He had already chatted with all of them […] The engineer was not too fond of the idea of proclaiming himself leader, and he called the two men in the Taunus for a conference […] A while later they discussed the matter successively with the whole group" (Cortázar 1966[1973])[79]

At the end of the story, when the cars start to run again, what is an unpredictable situation within the narrative context (but the most common function of a road) becomes the cause for a break in emergent social bonds. Individuals take leave without any chance of meeting up again; suddenly, they are separated from each other by the rapid flow of cars running through Paris: "The group was coming apart, it no

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[79] Translation by the author from original Spanish text. "Había charlado con todos […] Al ingeniero le molestaba la idea de erigirse como organizador y prefirió llamar a los hombres del Tanus para conferenciar con ellos […] un rato después consultaron sucesivamente a todos los integrantes del grupo" (Cortázar 1966[1973]).

longer existed […] that the group had disbanded irrevocably, that the daily meetings would never come back, nor the little rituals" (Cortázar 1966[1973])[80]

In "Autonauts of the Cosmoroute," the highway is presented as a place to escape by *changing the rules* of the common representation of travel. The *"little bear"* proposes to the *"wolf"*[81]: "We could live every day in a parking lot, outside the world, imagine, we could relax along this very monster of speed with all the freedom" (Cortázar and Dunlop 2007)[82]. The wolf describes the voyage by looking at the highway with eyes wide open and seeking to change its common meaning. The highway for Cortázar and Dunlop is no longer a line of pavement on the ground for speeding vehicles. It is something different, something beyond the stops on the road, and both authors uncover its hidden meaning (Cortázar and Dunlop 2007).

What would spatio-temporal restructuration consist of as presented in Cortázar's narrative, and of what help could it be to the approach of the social sciences? These questions remain open, and they deserve closer attention. Three approaches to spatio-temporal restructuration are proposed from an individual level within Cortázar's narrative: i) by interpretation, ii) by action, and iii) by imagination.

Spatio-temporal restructuration by individual interpretation, or re-interpretation, is the cognitive operation in which a pre-existing spatio-temporal regime is challenged. Such restructuration inherits social meaning by what we could call people's perception. The highway is represented by a perspective that challenges the idea of *"simple line of pavement on the ground for speeding vehicles"*[83] and instead, a novel meaning is proposed.

Spatio-temporal restructuration by action occurs when individuals and social practices transform the socially routinized character of action and behavior in a pre-existing

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[80] Translation by the author from original Spanish text. "El grupo se dislocaba, ya no existía […] el grupo se había disuelto irrevocablemente, que ya no volverían a repetirse los encuentros rutinarios." (Cortázar 1966[1973]).

[81] "La Osita" (little bear) is the name used in the book to address Carol Dunlop, and "el lobo" (wolf) is the one used to refer to Julio Cortázar.

[82] Translation by the author from the original text in Spanish: "Podríamos vivir cada día en un parking, fuera del mundo, te das cuenta, y en este mismo monstruo de la velocidad hacer un crucero de descanso con toda libertad."

[83] Translation by the author.

spatio-temporal regime. Here, the highway is re-appropriated by a specific type of social praxis that challenges the common behavior by saying *"we could live in the road."*

Spatio-temporal restructuration by imagination is the cognitive action that imagines an alternative and plausible praxis in a given spatio-temporal regime. In this case, the highway is represented as a place of constructed social ties, a situation that is not self-evident for any social actor. Cortázar's main character reflects, "the idea to have a child with her [in the motorway] ended up seeming as natural." It is in this very sense that the song by French singer Michel Fugain *"Une belle histoire"*[84] proposes a romance between a couple that meet each other randomly on the road. For many, this song was inspired by Cortázar's story and, without a doubt, it portrays a romantic and imaginary fantasy based in what we call spatio-temporal restructuration by imagination. This representation was a very pervasive image during the 1970s.

The three proposed types of spatio-temporal restructuration show some parallels with the threefold organization of "*type of space*" and "*forms of practices*" proposed by Lefebvre in "The Production of Space" (Lefebvre 1991). *Spatio-temporal restructuration by interpretation* appears similar to *perceived space*, as both are strongly connected to the social understanding of the existing practices deployed over space. Here, understanding in the phenomenological tradition of Heidegger is theoretical as well as practical[85]. However, the type of restructuration by interpretation always challenges the perceived and existing practices in space by offering an alternative way of action.

Spatio-temporal restructuration by action is connected, with much clarity, to the physical form in which social actors live the space. At the same time, *lived space* appears as the place where representations are triggered. Spatio-temporal restructuration also represents a sort of subversive way of practice, and from this

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[84] See the YouTube video: http://www.youtube.com/watch?v=u2UhQAhLc2Y&feature=kp
[85] In some ways, the thesis argument maintains that the perceived spatio-temporal restructuration is not only "Vorhandenheit" as a theoretical construction inside the social sciences description, but also implicitly "Zuhandenheit", i.e. an orientation toward the very unreflective life. See Sein und Zeit (Heidegger 1967).

perspective an alternative form of spatio-temporal representation over a given regime could be considered.

At the end of this taxonomy, spatio-temporal restructuration by imagination is presented similarly to *conceived space*. The imagination of possible spatio-temporal structures is a form of space representation forged at the individual and social level. Even though Lefebvre's "éspace conçu" is the space of technocracy and science, here the agency condition of this type of restructuration is engaged as a negotiation with the social level. In other words, the spatio-temporal restructuration by imagination is aware of the existing negotiation between individual experience and inherited spatio-temporal regimes.

Type of Practice	Type of Space	Type of Spatio-Temporal Restructuration
Spatial Practice	Lived Space	By Action
Representation of the Space	Conceived Space	By Interpretation
Space of Representation	Perceived Space	By Imagination

Table 4. Practices and space connected with spatio-temporal restructuration.
Self-elaboration based on Werlen (2004a: 53) and developed from Lefebvre (1991)

The three types of spatio-temporal restructuration proposed with regard to Cortázar's narrative speak to central issues in the social sciences: first and most obviously, spatio-temporal restructuration emerges at different but interconnected levels, namely interpretation, action and imagination; second and less evidently, spatio-temporal restructuration is located in a dialogue between structured spatio-temporal regimes and the spontaneous capability of agency to act, interpret, and perform alternatives to the existing regimes. In other words, spatio-temporal restructuration is located in the dialogue between spatio-temporal regimes and spatio-temporal arrangements.

Moving to spatio-temporal restructuration as the center of the analytical work means the problematizing of its constructive origin rather than a given condition. This addresses the negotiated stabilization of spatio-temporal structures between the levels of the regimes and the levels of the actions. The stable character of time and space no longer appears as a pre-existing condition for society but as the result of an investment of agency in spatio-temporal continuity over change. The idea presented by Hartmut Rosa where individuals are condemned to actively keep track of social

life and change, in this sense, gains empirical support. "[P]eople feel pressed to keep up with the speed of change [in the context of modern social acceleration]" (Rosa 2003: 11). This idea could be reinterpreted as a meaningful form of individual action, not only as an extended socially conditioned answer. In other words, the self-evident character of the spatio-temporal regime is challenged by subjective agency, which is the driving motor for social action in the double form of stability and change (Touraine 2002).

The spatio-temporal regimes cannot only be considered as an external condition of people's lives. They are an active source of orientation to position individual experience and expectations. Spatio-temporal regimes appear similar to the idea of horizon proposed by Pickering in his interpretation of Koselleck (Pickering 2004)[86]. Horizons are the theoretical devices that tackle the process of understanding of individuals' negotiation inside their historical references. This all-embracing notion of horizons is an active part of the stabilization of the notion of time and space.

Spatio-temporal restructuration, as it appears in Cortázar (in other words, performed as alternative form of action in time and space), is always anchored to the existing spatio-temporal regimes. The actions deployed by Cortázar's characters on the road are transgressive, because the narrative maintains the highway's social meaning as a horizon. This condition of a negotiated meaning between action and horizon, in the case of the artistic work and/or artistic performance, allows the conceptualization of *a double-sided process of spatio-temporal contextualization*. Consolidated regimes, as well as alternative arrangements, are complementary in terms of meaning, and they require each other for total unity of sense, either implicitly or explicitly. In Cortázar's narrative, an alternative spatio-temporal arrangement always appears as socially framed. The individual alternatives to socially extended spatio-temporal regimes were not free of inherited conditions for social life. This allows a *multi-level organization of spatio-temporal structures* as a form of limitation on spatio-temporal arrangement.

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[86] Michael Pickering, who says the figurative and analytical device of horizons used to negotiate the relations between experience, everyday life and historical time, closely follows the view of Reinhart Koselleck "horizon of expectation", in words of Keit Tribe in the introduction to "Futures past: on the semantics of historical time" "More emphasis is given to the latter notion, combining as it does the spatial extension apparently available to historical subject with the temporal projections that issue from this space" (Tribe in Koselleck 1983: 24).

Consequently, novel spatio-temporal configurations do not dissolve the limitations to individual action created by the existing regimes.

"The Southern Highway" depicts the unforeseeable spatio-temporal restructuration that touches every character and so proposes a mutation in the character of the total spatio-temporal regime. The long-lasting detention of the characters on the road makes sense only as a spatio-temporal reality, as opposed to the common understanding of the high-speed motorway and its completely ephemeral condition in the expierence of the drivers. The forming of social ties only makes sense if contrasted with the act of driving at very high speeds, socially disconnected from other drivers. The narrative process in which the existing space of action is contrasted with imagined space is proposed as a double-sided contextualization of the spatio-temporal regimes.

The same story also offers clues for understanding what has been portrayed in this section as multiple instances of spatio-temporal organization and limitation. The characters are anchored to the highway not because of natural spatio-temporal limitations on their persons; no people have real moorings with the road; no one stopped in a traffic jam is prevented from leaving to continue the journey by other means. In Cortázar's story they remain for months living on the highway because they are not willing to leave the vehicles behind. An excerpt from the text shows how people are surprised and even annoyed when during the night one individual leaves the place and his car. "At five in the morning there remained no doubt that Floride, as the boys in the Simca liked to call him, had disappeared […] Everyone was vaguely annoyed by this midnight desertion, and wondered where Floride could have gotten to in his flight across the fields" (Cortázar 1966 [1973])[87]. This social constraint on the emergence of individual spatio-temporal arrangements is at the core of the concept of "limitation." Here, the need to transport the vehicles and not the movement of the body appears to stop people. It is the social construction of dealing with distance, not any physical limitation that contains action.

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[87] Translation by the author.

In summary, this section proposed an understanding of spatio-temporal restructuration from the micro-scale by using two interpretative keys: i) the double processes of contextualization from the perspective of regimes and arrangements, and ii) the subjective nature of the arrangement and the social condition of the action's constraint. In the following sections, making use of Rosa's proposal of *temporal acceleration* and Werlen's concept of *everyday regionalization*, we will see how spatio-temporal restructuration forms the micro-perspective.

5.2.- Spatio-Temporal Structures in the Dialogue Between Regimes and Arrangements from the Perspective of Rosa's Social Acceleration

Overview

Scholars have interpreted changes in temporal structures from a macro-perspective in the context of modern society. In this sense, accelerated technical progress impacts and influences the form of subjectivity and society. Advocating for the study of spatio-temporal restructuration from the perspective of the interaction between spatio-temporal regimes (structure level), and spatio-temporal arrangements (agency level), this section offers an alternative route of analysis.

This section seeks to demonstrate that spatio-temporal regimes, as our form of relationship with time and space, are never an overall condition but a selective process. When social acceleration seems prevalent in modern society, it should not obscure the knowledge that every regime is based on heterogenic conditions and arrangements. Using a reference from system theory, it is possible to maintain that spatio-temporal regimes are *organized contingence* and never simply homogeneous and coherent. The second part of this chapter describes how an acceleration of social change and an increased contingence could be interpreted from the perspective of multiple spatio-temporalities. To this effect, the multi-level character of the spatio-temporal regimes does not contradict social change oriented toward acceleration. Nonetheless, it allows a more realistic portrayal of the spaces of inconsistency of acceleration, which have until now been considered just a side effects. Together, these portray a reinterpretation of Rosa's phenomenology of social acceleration from the perspective of selective spatio-temporal restructuration.

The section uses the framework of restructuration processes to emphasize the continuous negotiation and reformulations between individual spatio-temporal arrangements and their social spatio-temporal regimes, neither being as stable as the sociological imagination assumes. Spatio-temporal retraction and expansion, as well as synchronization and desynchronization, are proposed as a useful description of the multi-level character of spatio-temporal structure in late modernity.

5.2.1.- Changes and Selective Stabilization in the Spatio-Temporal Structure of Modernity

Hartmut Rosa presents the trend toward social acceleration by observing how many things that compose our everyday life experiences seem to be accelerated (Rosa 2003, Rosa and Scheuerman 2009). Nevertheless, the author quickly emphasizes that it would be misleading to suggest there is an overall, all-embracing wave of acceleration with no internal distinctions. There are processes that have not been accelerated, because they fall outside the possibility for acceleration or they oppose acceleration tendencies (Rosa 2010). One can appreciate that the trend toward acceleration in modernity should be approached with caution.

A social orientation toward acceleration could be suggested as a point of convergence for many social theorists. For example, the French anthropologist Marc Augé (1995) presents two characteristics within his notion of "supermodernity": the *"acceleration of the history"* and the *"individuation of cosmologies,"* both of which are in line with social acceleration. The acceleration of history implies that, in the contemporary world, people progressively experience more and more historical events. Consequently, the frontier between *history* and *present* becomes increasingly vague. In the words of Augé, "Our Modernity creates immediate past, creates history in an unrestrained way" (Augé1995: 25)[88]. Individuation of cosmologies in turn means the *sinking* of the intermediating cosmologies. In the proposal of the French anthropologist the construction of otherness requires the double language of identity and alterity. Modernity represents the imposition of the language of identity over the language of alterity. As a result, "supermodernity appears as an excess of event, images and individuality" (Augé1995: 25) [89]. When an overloaded social experience is proposed as a central characteristic of supermodernity, the articulation of an explanatory narrative of social acceleration is a further but unavoidable theoretical step.

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[88] Translation by the author from the Spanish version of the book. "Nuestra modernidad crea pasados inmediatos, crea historia de manera desenfrenada", "[sobremodernidad aparece como] exceso de eventos, el exceso de imagines y el exceso de individualidad" (Augé 1995: 25).
[89] Translation by the author from the Spanish version of the book. "Our Modernity creates immediate pasts, creates history in an unrestrained way" "[super-modernity appears as] excess of events, images and individuality." (Augé 1995: 25).

In another example, Zygmunt Bauman (2000) clearly introduces the theoretical connection between acceleration and time/space in modernity. By linking modernity with changes in human practices, the Polish sociologist emphasizes mutation in the structures of time and space as a prevalent social phenomenon. "Modernity was born under the stars of acceleration and land conquest," (Bauman 2000: 112) states Bauman with the intention to highlight the emancipation of society from the restriction of time and space. Consequently, the social relation with time and space becomes processual, selective, mutable and dynamic, as opposed to the previous situation in which the two categories appeared as objective, predefined, stagnated and stable. In this context, acceleration is introduced in social theory not by speeding up the biographies of people, as was shown in the previous reference to Marc Augé; on the contrary, acceleration emerges precisely as a result of the speeding up of people's experience of time and space. Following the conceptualization offered in the previous chapter, Bauman's proposal could be called an acceleration of spatio-temporal regimes. At the individual level, Bauman's conceptualization does not directly propose a trend toward acceleration as such, but fragility and liquidity of the biographical experience are at the center of his proposal. Nevertheless, if stability and invariability in society are presented as long-lasting and decelerated processes, the movement toward liquidity and fluidity is a metaphor for lightness or weightlessness, and such are the concepts he associates with mobility and inconsistency: "we know from practice that the lighter we travel the easier and faster we move" (Bauman 2000: 2). There is only one step from liquid modernity to accelerated modernity, as Rosa informs us how modernity loses the regulative principles inside the dynamic forces of acceleration and liquefaction: "In this diagnosed triumph of modern dynamization over the institutional forces of inertia, no new principle becomes visible. Instead one simply reaches a further stage of the process of acceleration and liquefaction that is a primordial aspect of modernity." (Rosa and Trejo-Mathys 2013:109)

A final example of social science's convergence with the notion of acceleration comes from a global system analysis perspective, engaged in by Giovanni Arrighi. This Italian sociologist, in one of his most renowned books, "The long twentieth century" (Arrighi 1994). proposes what could be understood as a third form for addressing social acceleration conceptually. Although not explicitly, the name of the book metaphorically proposes a growing century that to a large extent is possible only by

means of social acceleration. One question emerges before we go any farther: How can it be that a century, that is indeed an abstract an objective measure of time, becomes either longer or shorter?[90]

Temporal retraction and expansion are deployed by social action in two ways: i) through the acceleration of historical events: More things are happening in a given time period, and as a consequence, it seems that the century grows; and ii) through the effects of events that are extended beyond the limits of the century. The consequences of social events linger for longer periods of time, and thus it seems the century lasts longer.

In the proposal of Arrighi, we do not attend to social acceleration at the level of the individual experience; on the contrary, the book's main thesis refers to the structural level, "Our thesis is that capitalist history is indeed in the midst of a decisive turning point, but that the situation is not unprecedented as it may appears at first sight. Long periods of crisis, restructuring and reorganization, in short, of discontinuous change, have been far more typical of the history of the capitalist world-economy than those moment of generalized expansion along a definite path […]" (Arrighi 1994: 2). From the Italian author's perspective, we observe a shift in the spatial structure of capital accumulation, and move from developed regions to extended low-incomes areas. In some way, the Fodism-Keinesianism regime of accumulation has been replaced. Arrighi addresses other authors that portray the transformation from organized to unorganized capitalism (Arrighi 1994: 3). In a macro-scale analysis, acceleration is indeed the mutation from long-lasting, stable and organized capitalistic regimes to short-term, unstable and disorganized capitalistic arrangements. Using the concepts presented in the last section, the distinction between organized and disorganized capitalism shows the same organization as the differentiation between spatio-temporal regimes and arrangements. From unorganized capitalistic accumulation there is only a theoretical step to address the acceleration in the macro-level.

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[90] Interesting variants of long and short centuries, in the so called long nineteenth century, are proposed in the work of Eric Hobsbawm integrated in three of his books: The Age of Revolution: Europe, 1789–1848 (1962); The Age of Capital: 1848–1875 (1996); and, The Age of Empire: 1875–1914 (1987). The short twentieth century is presented in the book: "The Age of Extremes 1914-1991" (1994).

The acceleration of history and of people's biographies portrayed by Augé, the shift toward an accelerated experience of time/space presented by Bauman, and the expanded temporality of the 20th century described in Arrighi's work, all three perspectives point to the convergence of social theory in the changing structures of time. Acceleration has become, explicitly or implicitly, a central category for social analysis. In this context, and as was shown in Chapter 1, the main improvement of Rosa's theory is to consider acceleration as a constitutive element of modernity and not just one effect between others. It is only in Rosa's theoretical project that for the first time a critical theory of modernity is articulated around the transformation in one of the two a priori categories proposed by Immanuel Kant. Time restructuration should be restored for social theory and used to emphasize its entire illuminating potential. Hence, as Rosa proposes, acceleration remains absent as an explanatory device in the process of modernization.

"However, contrary to the other constitutive features of the modernization process – individualization, rationalization, (functional and structural) differentiation, and the instrumental domestication of nature – which have all been the object of extensive analysis, the concept of acceleration still lacks a clear and workable definition and a systematic sociological analysis. Within systematic theories of modernity or modernization, acceleration is virtually absent." (Rosa 2003:3)

Nevertheless, when Rosa proposes a phenomenology of social acceleration, the transformation is not constrained to the temporal dimension. The explanation of the theory expands its scope to refer to *space-time regimes,* which are defined by Rosa as our relationship with time and space. Spatio-temporal regimes, if we allow a subtle change in the order of words, appear as the overall social relation with time in three dimensions: i) spatial relations accelerated by improvement in transportation, ii) social relations accelerated by progress in communication, and iii) relations to things accelerated by increases in production (Rosa and Trejo-Mathys 2013:104).

Considering point (i) as an accelerated spatial relation, it should be argued here that the theory of social acceleration minimizes, even unconsciously, the significance of the structuration capability of space. This is particularly the case in the project of what has been called a phenomenology of social acceleration. For Rosa's

conceptualization, spatio-temporal regimes are relevant to demonstrate how space loses relevance and becomes a "function of time." The argument appears straightforward when he proposes "the fundamental modern experience of 'annihilation of space' has real basis" (Rosa and Trejo-Mathys 2013:99). The decoupling of time and space is the foundation of his phenomenological explanation.

Similar to the argument of time and space compression proposed by David Harvey (1990), Rosa's arguments rely on a shrinking of world size, a territorial reduction that is a consequence of the improvement in transportation systems. In the following section, two arguments will be used to question the all-embracing capability of this argument. The criticism is not directed at the modern and demonstrable wave of acceleration itself but of an argument that ruthlessly expresses a total subordination of space by time. In other words, it is the emergence of a modern spatio-temporal regime in which temporality becomes the only and most prevalent characteristic.

First, if the size of the world, as temporal separation between places, has been demonstrably reduced, then it would mean the world has been shrinked. Nevertheless this situation operates in a context of increasing interconnection of places during the past 500 years. In other words, the tendencies to the shrinking and enlargement have been historically coextensive. Second, if a reduction of temporal separation between places appears practically demonstrable in the social as well as individual experience, then this situation operates between specific places inside the world system and not in all places on the globe. Both arguments together are not evidence enough to deny a tendency toward temporal acceleration in transportation, but they are important elements to better frame the spatial consequences of the acceleration process. A selective process of spatio-temporal compression has been proposed as a central characteristic of modernity. Under no circumstances should this process be considered a structural condition to shrinking in the modern spatio-temporal regime.

As was shown in Chapter 1 by using the argument developed by Wolf Schäfer (2005), spatio-temporal compression exists, but it has not been as pervasive as the sociological imagination pretends it to be. The spatial dimensions of the world seem smaller by way of upgrades to communication and transportation, but only in a spatial horizon in which the world has been previously expanded. In this sense, Braudel's

explanation of world economies (Weltwirtschaftwelt) may be useful. According to him (Braudel 1985), there have always been enclosed systems of commerce and interaction that are constrained geographically as sorts of autonomous regions. The extension of these systems has occurred, and has been growing, slowly throughout history. If today we have a faster way of crossing the articulated economic world system than before thanks to commercial airplanes, it is not less true that the world was never as extended, in physical terms, as in today's economic interchange. In short, acceleration in transportation and communication exist, but it exists over enlarged territories of interconnection.

For the first time, the world system encompasses the whole planet, but it is simply not true that the world system actualizes all possible relations between places in the world. The image of a shrinking world transitioning from travel by horse to train to ship to automobile to airplane is a misleading representation. This shrinking applies to world routes and not to the world surface. The cost of the interchange connection-relation between Frankfurt and Boston has been reduced in every possible measure, but the same does not apply in the same fashion to the relation between La Paz and Ulan Bator[91].

This situation, observed from the perspective of system theory (Luhmann 1984), could be represented as the acceleration of one contingent selection of places inside the world system. The established interconnection is a selective process over other possible connections that are not actualized. Nevertheless, neither the actualized nor the non-actualized connections inside the world system represent all the possible connections. To illustrate this with a trivial example, a similar mistake could be made when we say that Spain is the current football world champion. Spain is the winner of an organized selection of teams that played in the South Africa 2010 FIFA World Cup. This does not mean Spain won against all the countries in the world, because the competition does not entail every single country playing against each other.

Evidence has been presented to demonstrate that spatio-temporal regimes, following Rosa's conceptualization of our relationship with time and space, are never an overall

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[91] A direct flight between Frankfurt and Boston may take around 8 hours of travel, while air travel between La Paz and Ulan Bator may take more than 70 hours and is only possible via two connections.

condition but rather a selective process. Besides the clear tendency toward temporal acceleration and the suppression of spatial barriers, every regime should be conceptualized as a contingent selection from other possible organizations, and never as an overall condition. Moreover, every regime is based on heterogenic orientation and conditions, and until now this has been expressed with the notion of arrangement. Spatio-temporal regimes as organized contingence are based on heterogeneous spatio-temporal arrangements.

5.2.2.- Multiple Spatio-Temporalities as the Result of a Selective Regime's Organization

Although spatio-temporal regimes in modernity have been accelerated, space does not disappear; it is not erased by the prevalence of time in cultural and social process. On the contrary, here it is argued that space becomes central to organizing the selective character of the spatio-temporal regime. In this sense, the thesis argument challenges Rosa, when he states that "precisely because space has become contingent and interchangeable for, say, economic investment and siting decisions, local and regional differences (e.g., climatic, infrastructural, or political ones) suddenly become very important, which can even lead (temporarily) to an upward revaluation of regional identities and particularities and above all to a repoliticization of space." (Rosa and Trejo-Mathys 2013:101).

Space does not become relevant as a side effect or just as an opposing force to the extended process of de-territorialization. Territory is the central element for reconstructing the selective process of social acceleration in modern spatio-temporal regimes. The representation of a selective and multilevel spatio-temporal regime appears useful and is based on four theoretical conditions: i) a place that shows acceleration is only one possible selection inside a totality of possible relations; ii) an actualization in which all places are linked by an accelerated and directed relationship is a factually impossible scenario; iii) if the acceleration of spatial connection is always selective, and spatial acceleration as a global condition is impossible, then a continuous shift in the accelerated structures can be expected; iv) each time an axis of relation between two nodes is accelerated, as would be the case in a two-dimensional

network, the connection between other nodes is decelerated. In other words, spatio-temporal distanciation is the correlate of the spatio-temporal compression.

With the four conditions explained above, the perspective of multiple spatio-temporalities gains strength. Not in contrast to the orientation of social change to acceleration, but in another way, the selective character of sociological analysis in spatio-temporal structures is reset.

Regarding the example of flight connection mentioned earlier, it is possible to state an orientation toward acceleration and reduction of flight time but always along or together with another orientation, through an increases in flight-cost. The image of a generalized acceleration is only one part of the picture. First, there are accelerated connections between cities with total independence of the measurable physical distance, and this is evidence of general acceleration. Normally, many authors who have presented evidence about a process of de-territorialization have shown this to be true and said that territory loses relevance. Nevertheless, while acceleration has been deployed independently of physical territory, it is not autonomous from the historical construction of territories. The image of accelerated routes as stable trend over the whole territory is just misleading. Secondly, the flight connection appears not only subordinated to an acceleration trend but also to the necessity to relieve the high demanded of the main connections or routes. Flight search engines on the Web increasingly offer flights that duplicate time travels simply with the intention of filling up secondary itineraries that remain in less demand. At this point, some may argue that this situation is an economic strategy that still privileges acceleration, while it becomes necessary to pay more for a faster, direct flight. Whether this is true remains a matter of debate, but what seems to be clear from the argumentation exposed here is the selective character of acceleration. "Selective" should be understood as the opposite of an extended and all-embracing condition.

The modern spatio-temporal regime is not accurately described when depicted only as spatial annihilation or as temporal supremacy over space. Territory may have been abstracted in the past 200 years, but this was always in a very selective fashion, in historical as well as material terms. To paraphrase Koselleck (Koselleck in Rosa and Trejo-Mathys 2013). if Europe were to shrink to the dimension of Germany because

of the introduction of the railway train, then the world would become the size of Europe due to the massification of air travel. This situation is only true if we wish to travel around the world via New York, London and Tokyo. If the intention is crossing the planet starting in New Delhi, visiting Moscow and Sao Paulo before arriving back in India, the situation would look very different. The accelerated connectivity between global cities in the economic core require perhaps 50 percent less time than global cities in the semi-periphery[92].

This example supports the argument for selective acceleration in the spatio-temporal regimes of modernity. This selective character is a result of heterogeneous spatio-temporal arrangements inside the regimes, some of which are very accelerated, others are accelerated, and some are even decelerated. The best way to represent the manifold character of the modern spatio-temporal regime is through the metaphor of a multi-level organization of spatio-temporal arrangements. This picture allows a more realistic portrayal of the inconsistent spaces of acceleration, which have until now been considered a side-effect phenomenon (or phenomena) alongside the acceleration trend.

Every form of spatio-temporal structuration has the potential to become stabilized in the form of a regime. From this statement, one easily concludes that regimes are contingent structures and not extended preconditions. Stabilization is the result of transformation from a macro-perspective, and of investment from a micro-perspective. A great deal of this thesis contributes toward a rebuttal of the structural determination of spatio-temporal regimes.

5.2.3.- The Multi-Level Character of The Spatio-Temporal Regimes

There are many attempts to explain spatio-temporal structures. Although they do not postulate an overall condition of regimes, they do specify some very extended stabilities. This situation derives directly from the macro-perspective of analysis

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[92] Here the reference to the semi-periphery is indeed a subtle allusion to the association of the five major emerging national economies knowing as BRICS, i.e. Brazil, Russia, India, China and South Africa. In a very simple calculation, the flight time between New York and Tokyo via London is 35 hours and 20 minutes, while in the case of the New Delhi–Moscow–Sao Paulo journey, the flight time was around 55 hours and 35 minutes.

explained in Chapter 4 and will be questioned in this section. To replenish the explanatory capability of the micro-perspective of analysis as the motor of multi-level spatio-temporal arrangements requires questioning the capability of the micro-perspective to deliver a plausible explanation of two phenomena, namely the process of acceleration in social change, and desynchronization in the social sphere. In other words, does conceptualization of the multi-level spatio-temporal regime offer satisfactory point of entry to study these phenomena, especially for the political realm?

One of the central explanatory devices offered by Hartmut Rosa in his theory of acceleration is the reference to *transformation in the realm of the experience*. This term can be portrayed as three forms of spatio-temporal restructuration, explained in the section 5.1, and pertain to the three prevalent orientations of practice in space, which run in the sphere of action, interpretation and imagination[93]. Of course, his argument is much more complex, and it would be a safeguard against this kind of criticism. For example, he says: "technical acceleration […] is itself a consequence of cultural, economic, and social-structural presuppositions, and the fact that it heavily influences social forms and modes of subjectivity does not mean that it determines them" (Rosa and Trejo-Mathys 2013:97). From this sentence, it is very difficult to propose an argumentative prevalence for transformation in the realm of experience.

Nevertheless, when we carefully examine the explanatory dynamic of acceleration, we appreciate that the representation illustrates how quantitative changes in the realm of social speed have a qualitative impact as a social revolution on the individual and social levels (Rosa 2003). The argument is expressed very clearly in the following sentence: "Even with respect to the tempo of social change, one should assume that a progressive quantitative escalation leads to a qualitative shift in the constitutions of social reality when critical threshold values are reached" (Rosa and Trejo-Mathys 2013:109). Quantitative transformation expands its impact to the qualitative level; introducing disturbance into people's lives implies the explanatory device begins to emphasize factual transformation or mutation in the realm of the experience. The acceleration of communication technologies that are mostly quantitative impacts the

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[93] See previous section on the Cortázar narrative.

context of social change that is mostly qualitative, but in both cases the level of interpretation and imagination remains absent.

If the explanatory device offered by Rosa privileges the description of how acceleration as quantitative phenomena impacts qualitatively in individual and social life, then his perspective inevitably favors the level of actions and facts over a social level of interpretation and imagination in the account of the temporal regimes. This situation by no means represents a criticism of his theory but opens up a space of inquiry into the multi-level dimension of acceleration. Individual interpretation and/or self-interpretation[94] both appear as relevant fields for sociological research.

The way in which Hartmut Rosa portrays social acceleration is developed as connected to the social level of production and reproduction, work and family structures. This means that we move from an intergenerational form of change in early modernity to generational change in classic modernity and then shift to intergenerational change in late modernity (Rosa 2003: 18-19, Rosa and Trejo-Mathys 2013:110). The craft and profession, as it is found in early modernity, shifts to an individual decision in classic modernity and becomes totally interchangeable in later modernity. In a similar vein, love relationships were the fruit of family arrangement according to social status in early modernity and compromised the total familial structure and not just the individual. In classic modernity, romantic love appeared forcefully and was decided autonomously, with the intention to last a lifetime. In late modernity, in the words of Rosa, "the life period partner is tending to replace the life partner." (Rosa and Trejo-Mathys 2013:11).

Rosa's argument anticipates the critique made above regarding a sort of inclination toward social fact over individual or social interpretation. He proposes, "this argument does not by any means suppose the decline of the ideal of the bourgeois family per se, on the contrary: it is entirely consistent with the empirical finding that this form of life is in fact a social model to an increasing degree and that individuals

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[94] When using the notion "self-interpretation" in reference to the acceleration trends, I intend to open a space for a theoretical integration of Rosa's reflection on the four levels of self-interpretation (Rosa 2004). Covering this integration would surpass the scope of this thesis, but it would serve future researchers well to take note of Rosa's reflection on self-interpretation.

today are still inclined to enter into (new) family ties." (Rosa and Trejo-Mathys 2013:111).

Could we see the same facts not as evidence of a growing tendency toward acceleration, but rather interpret this as an indication of multi-level organization of temporal structures from the perspective of social action and interpretation? Besides people having more partners or romantic relationship than before, the issue remains that many report being incapable of accelerating the time it takes to forget a previous romantic relationship before beginning a new relationship. It is a similar state of affairs in the employment realm, where people seem to emphasize only one job that they should keep during their lifetime, undeterred by the frenetic rotation of employment. Again, people seem to be freed "emotionally" of previous loves and occupations that are not accelerated in the way in which they experience those same things. In Rosa's argumentation, this situation is evidence of the *"kinetic energy"* that mobilizes people's action, a prevalent condition of classical modernity. Indeed, what occurs paradoxically is a reinforcement of the process of acceleration and liquefaction of modernity.

This thesis offers an alternative interpretation. If this type of dissonance exists between the level of action and the level of interpretation, between the level of society and the level of the individual, then there is evidence to postulate a multi-level organization of spatio-temporal regimes in modernity. Acceleration due to dissonances and different rhythms of expansion is a selective process and not an over-extended condition.

The difference in acceleration speed between the personal experience and the personal interpretation of the experience is the theoretical substratum on which to propose multi-level spatio-temporal restructuration at the micro-scale. Theoretical benefits are to be gained from a more realistic portrayal of the spaces of inconsistency of acceleration (instead of mere side effects or escaping phenomena to the global trend of acceleration).

Along with the aforementioned process, a second phenomenon could be understood within the framework of multi-level spatio-temporal restructuration. This is the

connection between the speeding up of society and liberal democracy (Rosa 2005b). Rosa (Rosa 2005b: 445), argues that some speed in social change supports the democratization processes, while going beyond a certain threshold of acceleration may undermine it. His article criticizes the minor role played by the temporal structure in the analysis of Western democracy. By incorporating what he calls "politics in time," the author wants to make accessible the interconnection between the time of politics and the temporal structures of other social spheres, such as economy, society and culture (Rosa 2005b; 446). Political temporality interacts with temporal structures and the horizons of the rest of society.

With this conceptualization in mind, it is easier to posit an argument of multi-level spatio-temporal restructuration following the same organization observed in social acceleration. The desynchronization of temporal structures in social subsystems[95] is evidence enough to support the claim that spatio-temporal regimes are organized over heterogeneous spatio-temporal arrangements. If the temporal structure of modernity is *highly dynamic*, as Rosa proposes, an observable lack of coordination between temporal regimes and arrangement in contemporary societies is probable. Two routes of sociological explanation appear plausible: i) portray a social orientation toward acceleration where islands or isolated places may become colonized by acceleration in the future. In this sense, the author proposes acceleration as a universal characteristic of modernity, not only in the Western World, but also in South America, Asia and Africa today[96]; or ii) assume desynchronized temporalities running across society with a tendency to selective acceleration, this means, with the capability to speed up as well as slow down, social phenomena as response to different requirements.

Concerning spatio-temporal restructuration, I wish to briefly address two of the five pathways of criticism proposed by Rosa regarding social acceleration (Rosa 2005b), which are the most relevant for the thesis argumentation. The intention is to prove the alternative capability of multi-level spatio-temporal regimes to deliver plausible

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[95] In terms of Luhmann's system theory concept.
[96] In this sense, it is possible to understand the abstract written by Hartmut Rosa for the Spanish version of his article "Social Acceleration: Ethical and Political Consequences of Desynchronized High-Speed Society", "Aceleración social: consecuencias éticas y políticas de una sociedad de alta velocidad desincronicada" (Rosa and Campos-Medina 2011)

explanations of phenomena primarily addressed by acceleration theory. This is a *critique of hidden temporal norms* and the *critique of desynchronization.*

The critique of hidden temporal norms is based on three statements: i) Temporal structures allow dialogue between systemic macro-level developments and individual micro-level perspectives; ii) temporal structures and horizons appear as factual givens, objectives and natural in character; and iii) temporal structures are a stronger form of social bond than moral or systemic needs of coordination. They are more efficient because they are silent or hidden (Rosa 2005b: 455). From the perspective of spatio-temporal restructuration, time appears as a form of regulation and not as a hidden condition. Expanding on the proposal of Lefebvre's production of space to the production of time, we can say spatio-temporal restructuration is constructed by social action, and this is the reason why some specific social groups are capable of stabilizing a particular time structure. Without going into great detail, observing the spatio-temporal organization of the university professor and/or university student would present a good example. They are not beyond the temporal restrictions of deadlines, clocks or fast social changes. They are not particularly different from any other person. Nevertheless, it would be very interesting and surprising to observe the patterns of i) *sleep-awake day organization* or ii) *place of living–commuting–place of work localization*. Both social situations may very well challenge the overwhelming trend of acceleration and social bonds, understood as social restrictions, proposed as the outcome of temporal changes. In this sense, a selective structuration of time and space appears the more realistic portrayal of contemporary life conditions.

As an alternative to the trend of acceleration, a critique of desynchronization is the central element of multi-level spatio-temporal restructuration. Desynchronization is addressed in three ways: i) the unforeseeable consequences of technical acceleration in our relationships with the objective world and the social world, ii) desynchronization as a lack of coordination between social spheres, and iii) desynchronization as a problem for the individual in negotiating his/her experience in the context of social history, in other words, the desynchronization between everyday life, life plans, and the perceived perspective of our "epoch."

Using Oriana Bernasconi's (2011a) conceptualization of "*time expansion*" and "*time retraction*" as the central device of narrative elasticity to address the negotiation of personal experience over a lifetime, we are able to better disentangle desynchronization from acceleration trends. In the context of social change, the negotiation between individual experience and the categories we use to make sense of the temporal dimension of social life is a recurrent problem. A temporalized notion of selfhood forces an active process of interpreting life experiences in a dialogue between personal stories and social discourses. The interpretation made by the individual evolves through time, and transformation of self-conception entails reinterpretations of personal experience. These run parallel to changes in the biographical lines, which are organized socially. In this example, temporal structures of social and individual life are presented as connected with the struggle for synchronization. Nevertheless, temporal acceleration does not play a key explanatory role.

Another example of multi-level spatio-temporal restructuration, is the technological wave of synchronization that has been labeled on the electronic devices simply as "sync," but which is not linked primarily with time. The need to synchronize music, photos, books or files libraries across different electronic devices does not relate to a temporal problem, and not at all across different acceleration levels. In this situation, the challenge of synchronization appears primarily connected to spatial coordination, even if this spatiality relates to "virtual space." It becomes possible to argue that the critique of desynchronization in society is not centrally located in the temporal dimension. It is not time restructuration but the multi-level condition of social and individual experience in modernity that requires a sort of re-integration.

Rosa's phenomenology of social acceleration has been addressed from the perspective of multi-level and selective spatio-temporal restructuration. What becomes clear is a narrative tendency toward social acceleration in sociology, accompanied by a silent (and not self-evident) spatio-temporal restructuration discourse. Spatio-temporal restructuration can be tracked in all social disciplines anchored to the social sciences as a central element in the evolution of explanatory devices. The next section addresses this issue in relation to human geography (in its German version as *Soziale*

Geographie) from the action perspective developed by the Swiss geographer Benno Werlen.

5.3.- Spatio-Temporal Structure Emergence and Stabilization from Werlen's Notion of Everyday Regionalization

Overview

The emergence and stabilization of spatio-temporal structures can be seen as one of the most intriguing social processes – not only because social processes always involve spatial and temporal components, but also because the spatio-temporal arrangements and regimes are central outcomes of action. This section proposes as an explanatory route the connection between the action-oriented constitutions of space and the social inquiry over the relation between agency and structure.

This chapter's first part discusses the action-oriented construction of time-space in modernity. A philosophical narrative is proposed in which the high role given in the Kantian philosophy to both categories inside the epistemological inquiry is found at the basis of its reification in social science research. To fill this theoretical gap, the proposal of Benno Werlen to engage the phenomenological roots, in the works specially of Husserl and Schütz, is presented as a satisfactory enterprise. This theoretical perspective offers in its final stage a narrative of spatial construction as an outcome of social action.

The second part describes stabilization and change in spatio-temporal regimes as connected with the heterogeneous character of the spatio-temporal arrangements. This conceptualization of regimes and arrangements, unlike the concept of everyday regionalization, allows the incorporation of different sorts of temporalities in the process of spatio-temporal restructuration. But the main conclusion of this section will be a clear presentation of the difference between regimes and arrangements, not in objective spatio-temporal terms, i.e. only regarded with higher or lower extension. The difference between regimes and arrangements only exists in reference to the social action of regionalization, in which regimes represent major stability for social practices. In this sense, arrangements are equally fruitful to organize transitory time-space schemes and orientation at the intersubjective level.

The third and final part seeks to further the analytical scope of the spatio-temporal restructuration in the light of the different type of action in the context of territorialization that Werlen presents. If space is defined as a formal and classificatory concept that allows the taxonomy of rational, normative and communicative actions as bases in the constitution of space then a similar stand could be taken with regard to the study of the typical forms of spatio-temporal restructuration. The conclusion illustrates that all three different types of action behind spatio-temporal restructuration have the ability to break with the stable meaning and the historical and inherited condition of the regimes.

As a result of this situation, the heterogeneous character of the spatio-temporal regimes and the multi-level condition of time and space restructuration in late-modernity is reinforced as an analytical perspective. In summary, the major payoff of this section is the possibility to mobilize the theoretical achievement of the spatial dimension, in terms of regionalization, to the temporal dimension.

5.3.1.-Action-Oriented Construction of Space in Modernity and Late-Modernity

It is by looking to philosophy that we get an impression of the centrality of the categories of time and space in theoretical reflection. In the Western tradition, both categories were meant to provide a safe path for engaging with the very basic questions about reality in ontological reflection. Evidence of the significance of reflection about time and space is found as far back as the works of Plato, who considered space as part of a third essence, one that is infinite, eternal and has a place for all entities (Campos and Yavar 2005: 16). In the case of Aristotle, similar to the reflection made by the Spanish architect-theorist Joseph Muntuñola (1974), the notion of space was focused on the idea of boundaries. The abstract idea of space is approached by the notion of place, in which vicinity emphasizes the constant relationship between continent and content.

The privileged status given to the categories of time and space as central elements in the rational understanding is achieved with the Kantian philosophy. In this theoretical system, both categories are presented as a *condition of possibility* of every phenomenon. Therefore, they are categories that cannot be derived from objects or the relation between them. By contrast, it is thanks to time and space that human knowledge is capable of understanding. So central are the conditions of time and space to Kantian philosophy that they are drawn out of the realm of volatile reality. Here we find the foundation for pre-existing sense or *a priori* character of time and space. "Space is not an empirical concept (Begriff) which has been abstracted from outer experience […] Space is necessary representation, and, consequently is a priori," says Benno Werlen (1993) regarding Immanuel Kant. From this quotation, it is possible to conclude that knowledge requires the organization of reality provided by time and space, and in the same way phenomena only exist as situated in the material order provided by time and space.

Nevertheless, the philosophical status given to time and space in modernity has repercussions for the kind of social explanation that is provided. It is possible to make the following observation: The philosophical given character of time and space (as a priori) rests on the basis of its excessive objectification in the social sciences approach.

In the context of the European modern Enlightenment, the fundamental role played by time and space for the epistemological question would become the source of the reification of time and space in the nascent European social sciences two or three centuries later. In this regard, the most common conclusion from the objectivist perspective would be that people's activities appear as a function or an outcome of the objective condition of time and space. Rejecting this objective status of time and space, Anthony Giddens, in the preface to Benno Werlen's Book "Society, Action and Space" (Werlen 1993), proposes that the performance of geography as the spatial science results from an initial shortcoming: "Kant's categorical notions of space became translated into an explanatory endeavor" (Giddens in Werlen 1993: xii). This claim is very similar to the argument presented in the previous paragraph.

It is from this perspective that the Swiss geographer Benno Werlen talks recurrently about "*spatial fetishism or overspatialization of the social world*" (Werlen 1993: viii). In a similar fashion, the German urban sociologist Martina Löw states, "It has become an academic self-evidence that space can only inadequately be conceptualized as a material or earth-bound origin of social processes. This could commend a theoretical view of space as the outcome of action […]"(Löw 2008: 25). For Giddens, Werlen and Löw, the action-oriented origin of space is the keystone for theoretical reflection in the contemporary social sciences.

Action theory offers the social sciences the possibility to replenish the creative condition of human activity in the structuration of society. In the case of human or social geography, following the Anglo-Saxon or German nomenclature, an action-based approach, and its further development into a practice-centered orientation, delivers the methods and the foundation for the geography-making routed in the social sciences tradition (Lippuner 2011: 461).

The action-based approach to human geography developed by Werlen in the German-speaking world distances itself from the traditional representation of space in the European enlightenment and seeks out roots in the phenomenological perspective elaborated upon primarily by Edmund Husserl and integrated in the social sciences by Alfred Schütz. In this sense, Lippuner comments that in Werlen's theoretical project,

as well as in phenomenology, space should be addressed as a type of grammar for the orientation of the social actors in the physical world (Lippuner 2011: 463). It is in this sense that the everyday social experience proposed by Schütz, constructed around the previous world (*Vorwelt*), the contemporary world (*Mitwelt*) and the future world (*Folgewelt*), make a significant contribution toward a better understanding of the role of space in the orientation of social action.

According to Zhao (2004), Schütz's division of the contemporary world is as follows: "the realm of consociates made up of individuals sharing a community of space and a community of time, and the realm of contemporaries made up of individuals sharing neither a community of space nor a community of time." The central element in the quotation from the work of this Chinese-American scholar refers indirectly to the composition of the community, based in the structuration of social life in past-present-future, the condition offered by the social organization provided by time and space.

Using phenomenology as a starting point, we gain a better perspective of Werlen's intention to address the collective construction of the social world. Time and space cease to be considered as merely a boundary to social action, and instead it is represented as a motor for spatialization. In this description, the answer to one question remains obscured: What is the special condition of spatialization established by social action in late-modernity?

The inquiry addresses the construction of space in late-modernity. In Lippuner's words, an action-based perspective, social practices are neither temporarily fixed nor embedded in spatial terms. As a conclusion to this condition, spatio-temporal disembeddedness makes possible and necessary a constant recombination of time and space in the context of everyday practices (Lippuner 2011: 463). This shows many similarities with what has been called in this thesis the micro-perspective of the spatio-temporal restructuration and especially in the first section of this chapter. If social experience is no longer anchored to spatio-temporal determination, spatio-temporal articulation means negotiation of these two categories by individuals and their social contexts, both formed by i) their everyday practices, ii) their socially conditioned histories, and iii) their representations influenced by the structure of past-present-future.

At this point, I would like to draw another conclusion from the same diagnosis. If social action in late-modernity, more than in any other historical context, is no longer embedded in spatio-temporal regimes, then spatio-temporal regimes appear as the outcome of social practices. In the same way, the interpretation of Cortázar's narrative images of highways from the perspective of spatio-temporal restructuration, it offers an account of the interaction between spatio-temporal regimes and spatio-temporal arrangements.

If late-modernity means de-temporalized and de-territorialized social explanation is improved by a spatio-temporal construction based in everyday life, then the level of individual arrangements (represented as micro-level) achieve supremacy over social regimes (typically considered as macro-level). Only in this sense does it become plausible to understand Löw's critique of Werlen's proposal. In her view, the focus of the action-centered approach is largely the process of *producing space* and the issue of "reconstructing the regionalizing consequences for agents" (Löw 2008: 33 based in Werlen 2000). The critique is similar to the argument presented that Giddens and Werlen conceptualize structure only in relation to the meaning they attain to action, and give little relevancy to the strength of structures to enable action. For Löw, when observed only from the micro-perspective, space reproduces the dualism between structure and agency, instead of moving toward a dualistic perspective.

The critique may sound excessive when we emphasize how the same notion of space is already embedded in the structural condition of social structures.

It seems that for Werlen there is a similarity of sorts between the construction of the social world and the construction of society. According to Lippuner (2011), the social world is conceptualized as a continuing realization, a permanent achievement of social actors in the frameworks of their own everyday social practices. If we observe the phenomenological roots of Werlen's work present in the Schütz project, the threefold structure of time and space in the notions of past, present and future world, then the single individual action is by no means the privileged theoretical perspective inside the micro-perspective. Furthermore, there are many points of convergence between Werlen's everyday regionalization and the social realist proposal of Margaret

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Archer. In the theoretical endeavor of the latter, the dialogical relationship between structure and agency (as opposed to their analytical independence) could only be synthesized by their co-extensive character over a long time span. A realistic approach to everyday practices must consider the temporal rooting of individual action in society, as is presented by Schütz and central to Werlen's endeavors. This discussion will be developed in the following section, which deals with stabilization and change in the spatio-temporal regime as a result of social action.

5.3.2.-Spatio-Temporal Regime Stabilization and Change as Individual Investment

The distinction Werlen makes between individuals living *their* world and subjects living *in the world* may be a good way to introduce this sub-section. From this perspective, individuals always regionalize through action, representation and imagination. As a result, the characteristic world-binding of social condition is not the result of space, nor is it a precondition for society, but a fundamental achievement. As Werlen clearly states, "space is therefore an element in the processes of world-binding and not constitutive of the social world." (Werlen 2004a: 57)

It becomes evident that this constitution of space can be replicated with spatio-temporal regimes. Spatio-temporal regimes are not socially given but the result of social processes. In the same way that external evidence of society enables the process of the reification of society, as Berger and Luckmann (1989) propose, the constant presence of spatial regimes for subjective agency facilitates the reification of space. Nevertheless, this process of objectivation and reification obscures the social construction of spatio-temporal regimes, which under certain conditions could even been called social production.

If spatio-temporal structures are not given realities but social formations, they require individual investment in their maintenance and mutation. Spatio-temporal structures in this sense have been conceptualized as heterogeneous in the previous section; they undergo a constant *process of restructuration*. Thus, *stability* as well as *change* is always a result of action and never its precondition. The following sub-sections will explore these phenomena. Here, using a constructivist approach does not mean in any

way that social reality is considered as a blank page for individual acts and social action, nor that individuals and societies confront a tabula rasa in the process of spatio-temporal restructuration.

The social construction of spatio-temporal structures, as has been shown repeatedly in this current section, represents a moment inside a constant succession of spatio-temporal regimes. Past, present and future spatio-temporal regimes, to paraphrase the phenomenological nomenclature of Schütz, reflect an action-based approach that is never unrestricted from structural determinants. It also implies that spatio-temporal structures are never fully conditioned by past or future arrangement[97].

The social construction of spatio-temporal structures has been explored as organized in a double process of *contextualization* and *limitation*. The use of Cortázar's narrative figure of highways sought to highlight the negotiated character present in the relationship proposed between regimes and arrangement. *Contextualization* reflects how the new meaning created around the highway must remain referenced to the socially stabilized meaning of the road. This representation highlights the constant dialogue for interpretation between structure and agency. *Limitation* shows how the multi-level condition of every novel action performed on the highway is always socially constrained by the existing spatio-temporal regime, its physical structure and its social meaning.

A similar stance could be taken to address the social construction of spatio-temporal regimes in late-modernity. The geography-making typical of industrialized modernity gave primacy to space as the restriction for action. When social practices appear to promote an unanchored relation between time and space, a dwindling need for spatio-temporal coincidence is claimed by social sciences as a central condition for globalized social experience. As a result, de-territorialized or de-temporalized social explanation emerges. In the action-oriented or practice-centered construction of space, the decoupling of time and space is not a structural condition. Decoupling becomes an

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[97] Werlen approaches the double condition of action as the only source for change, and at the same time, it is always socially framed in the following way: "We then adopt a perspective that emphasizes subjective agency as the only source of action, and hence of change, while at the same time stressing that the social and material world also shape social actions, while the latter produce and reproduce such conditions." (Werlen 2004b: 110)

actualized possibility of human experience, owing to certain kinds of actions. In other words, individual practices and routines are deployed in spaces that no longer share the same temporality, i.e. the same time zones, the same year season. It is possible to argue that the multi-temporality of spatiality was always latent for human experience.

Multi-temporalities and multi-spatialities associated with human experience are socially constructed, even though they have the capability to confront and constrain social action. Spatio-temporal social regimes are not natural for the individual; they function as a context for both orientation and disorientation. The twofold condition of every regime as orientation and disorientation, or as restriction and opportunity, is always present in an explicit or a latent state[98]. The social process of sense-making with regard to the spatio-temporal regime is always contextualized, and limited to the same extent.

Bringing this discussion into the theoretical framework of Werlen's everyday regionalization means expressing the notions of *contextualization* and *limitation*, presented in the formation of novel spatio-temporal regimes, in different forms of world-binding (Werlen 2004b. This section discusses the scope of this assertion under the notion of *region*, a central element in the modern process of spatio-temporal restructuration, and *regionalization* is understood as the outcome of world-binding.

Regions, according to Werlen, are not pre-existing entities, nor are they socio-spatial facts. On the contrary, regions are part of a constant social process and of an irreducible social becoming. The notion of actors and objects being inside a social world obscures the fact that the production of spatio-temporal regimes is a constitutive part of the life-world in different social configurations i.e. pre-modernity, modernity and late-modernity. Werlen says the different forms in which action performs world-binding are the access routes to the study of spatial dimension in late-modernity. For this thesis, Werlen's concept world-binding will be considered the point of entry to a deeper conceptualization of the spatio-temporal restructuration.

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[98] For more on this subject, see Werlen's (2004b: 154) reference to Bauman (2000: 110): "One of the important conditions and implications of this perspective is that spatial aspects – depending on the context of action – are both gaining and losing their relevance: A bizarre adventure happened to space on the road of globalization; it lost its importance while gaining in significance."

Interpretation, action and imagination are central elements in the process of stabilization and change in spatio-temporal regimes. This description could be easily connected and expanded in scope to include Werlen's perspective of action. When this Swiss geographer proposes changing the observation of the geographical world from space as starting-point to an action-centered perspective, he considers not only the material dimension. The material dimension is understood always in connection with the embodied subject, its socio-cultural and material conditions, and the context in which a certain form of subjectivity appears, and it is negotiated. Action-oriented geography is by no means only a material representation of people's acts. Change and stabilization in the spatio-temporal regimes require emphasizing the subjective agency as the source of action. Action addresses the realm of practices, representation and perception.

This conceptualization, which from a general perspective here has been called the micro-perspective approach, allows us to observe the influence of everyday life actions on spatio-temporal arrangements. The double conceptualization of the spatio-temporal structures in terms of regimes and arrangements permits the analytical incorporation of different temporalities and its distinctive effects in the social analysis.

Spatio-temporal arrangements appear connected with everyday practices, but in opposition to the conceptualization offered by Fernand Braudel's work that was presented in Chapter 4, arrangements are completely able to spatialize and orient action at the intersubjective level. This spatialization is not always durable, but there is no reason to assume beforehand that it has no chance of becoming a stable pattern to coordinate action in the form of a regime. Spatio-temporal regimes appear commonly connected with long-lasting processes of regionalization. It is exactly in this sense that it is possible to understand the history of the Mediterranean reconstructed by Fernand Braudel. We could say that "The Mediterranean and the Mediterranean World in the Time of Philip II" (Braudel 1949 [1966]) is emblematic of regionalization at the macro-scale.

The question that is relevant for Werlen's theory, in light of Braudel's categories, is whether his research interest remains at the level of the individual fact (time of event

and *histoire événementielle*), social phenomena (long-term social, economic and cultural history) or the geographic and environmental structures (very slow change, cycles and structures). Braudel observes the emergence of the long-lasting spatio-temporal regime as neither totally unanchored from social action nor directly condemned to individual agency motivation. By contrast, Werlen seeks a geography-making where individual agency is the only motor for spatio-temporal structuration and restructuration. This is emphasized in order to highlight the thesis's intention to offer a twofold approach of space and time with regard to regimes and arrangements. Different forms of social times are connected with very specific forms of social spatialization.

The analysis of the notion of everyday life in Werlen should be conducted carefully. As we have seen in the section 5.2 on Hartmut Rosa's theory of social acceleration (Rosa 2005a), the capability for daily action to spatialize increases in the context of late-modernity, and this increase involves the individuation of biography, acceleration of history and expansion of time frameworks. This particular condition of space in late-history was not so evident at the time when Fernand Braudel wrote his doctoral dissertation. As a prisoner in a German camp, history must occur in another place far away, framed by a different spatio-temporal structure.

In the case of late-modernity, daily action runs together with the historical deployment of spatio-temporal disembedding mechanisms. The bond between society and space-time could be changeable and unstable as a result of the forces exerted by different types of action required of every social dimension and social context. This situation also means an increasing investment for space-time recombination in the context of daily practices (Lippuner 2011: 463). This unstable situation in late-modernity is clearly expressed by Werlen when he says: "With the growing power of disembedding mechanism it also becomes obvious that all spatial aspect are nothing but frames of reference constituted in respect of the type of action that needs to be (or is) performed" (Werlen 2004b: 157).

The outcome of social action and institution enactment as spatio-temporal restructuration will be studied in the second part of this thesis, with exhaustive references to the process of ecological modernization in Chile between 1990 and

2010. From an analytical perspective, action, besides the mechanisms of spatio-temporal disembedding, always runs through a selective process of spatio-temporal regionalization. In this sense, it is not entirely correct to talk about spatio-temporal arrangements as low-scale events while referring to spatio-temporal regimes as long-lasting structures. More accurately, the processes of regionalization linked to spatio-temporal regimes is more stable not in terms of space and time but in relation to action. Action has the ability to selectively spatialize and temporalize social processes. Spatio-temporal regimes are more stable sources of orientation for action, practices and experience than spatio-temporal arrangements. The type of regionalization that is proper for a regime becomes a stronger frame of reference for individual agency in terms of interpretation, action and imagination, with a certain level of independence regarding its internal or abstract spatio-temporal extension. In the following sub-section, the conceptualization of spatio-temporal structures will be connected with the three different forms of the constitution of space, which Werlen describes as rational, normative, and communicative (Werlen 2004a, 2004b).

5.3.3.-Different Types of Spatio-Temporal Structures

In the section dedicated to spatio-temporal restructuration in Cortázar's narrative, three types of spatio-temporal restructuration – by action, imagination, and representation – were proposed as a reference, using the work of Lefebvre quoted in (Werlen 2004a). In the present sub-section, this analytical classification is complemented by showing the capability of spatio-temporal restructuration to become a sensible analytical tool in the context of the three different types of action (Werlen 2004a, 2004b) describes as rational, normative, and communicative.

Following Werlen's definition of space as "formal and classificatory concept, a frame of reference for the physical components of action, and a grammalogue for problem and possibilities related to the performance of action in the physical world" (Werlen 2004b: 155), it is possible to extrapolate a similar condition for spatio-temporal restructuration. The social construction of spatio-temporal arrangements and regimes inside the constant activity of human regionalization has a double condition. First, it appears as a source of meaning, because it allows for classification that orders different aspects of reality. And second, considering its formal character, spatio-

temporal restructuration is detached from objects and influences, which are not mediated by human or social action.

From the perspective of rational action, spatio-temporal restructuration describes how the production of novel spatio-temporal structures run parallel with the processes of modern de-mystification of the world (Weber in Werlen 2004b: 156). This process is co-extensive with the introduction of abstract principles and metrical measures to organize space. De-mystification and colonization of the life-world through rational action are two sides of the same coin.

With center in the spatio-temporal restructuration as a consequence of rational action, following Habermas's formulation of life-world's[99] colonization by modern and formal rationality (Habermas 1987a), the notion of place, as historical construction, has been abstracted form the social relations embedded in its emergence. Rational action consciously breaks with the human and social bonds with place. Using Augé's formulation of rational action, space and the economic dimension stand in contrast with the anthropological character of place as historical and relational, and a source of identity (Augé 1993 [1992]: 57).

Normally, we observe the process of spatio-temporal restructuration as the result of rational action connected with a process of enlarged regionalization. The enlargement of spatio-temporal frameworks means wide territories and long periods are the horizon for social action. At first glance, this argument may seem to match the process describing the emergence of global narratives, based on the work of Fernand Braudel in Chapter 4; however, it is not the case. If Braudel's attitude was to seek *shelter in the longue durée* in late-modernity and under the prevalence of rational action. The spatio-temporal regimes of wide extension and long duration have been

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[99] We should be aware that Werlen's notion of "life-world" represents a critical standpoint toward the social sciences' reception of the same concept, as exemplified in the cases of Schütz, Luckmann and Habermas. For these authors, life-world is presented as a mechanism of social integration in the context of co-presence. This definition, according to Werlen, is not contained in the original formulation of the father of phenomenology, because: "Husserl's definition implies no immediate space nexus. One's life-world is characterized by a certain 'attitude' and a certain topical 'horizon.' " Starting from this analytical distinction, Werlen is able to differentiate between the grounding function (Boden-Funktion) and the topical horizon of interest (Horizont) of the life-world concept. In its original formulation, life-world is not defined by its ability to distinguish between a scientific and a natural attitude toward world phenomena, but by the type of interest portrayed by actors in their day-to-day life action, what Husserl calls "Sondernwelten" (Werlen 2004b: 158).

colonized by rational action. In this sense, an extended domination over nature and population appears everywhere as a result of this enlarged time-space process. In other words, the transformation of the meaning of action connected with the macro-scale could be presented as betraying the original concern of the Annales School. The commodification of nature through modern green technologies and rational sustainable management are two of its principal devices. The exploration of this situation and the ecological modernization process in Chile will play an important role in the second part of this thesis.

Spatio-temporal restructuration from the perspective of norm-oriented action describes how political authorities have enacted the production of novel spatio-temporal structures. This type of territorialization is based on the regulation of the action by the twofold structure of *allowed/forbidden* in predefined spaces. In Werlen's conceptualization, the formal content of this type of action is linked to the geometric representation of the space and the body-centered perspective of practices. A conclusion drawn from this analysis is that the inclusion/exclusion of social actors of a certain territory has a basis in the normative organization of space by the National State.

Focusing on spatio-temporal restructuration as a consequence of norm-oriented action, and following Harvey's and Smith's idea of uneven development, it is possible to emphasize the asymmetries and disintegration of territories as a result of ruling enactments made at national or international institutions. Evidently, an increasingly unequal development of territories exists in the context of globalization, but the origin and the type of disparity is dynamically organized across time and space. The action organized by norms has the same capability as rational action, either explicit or implicit, to break with history, relation, and meaning embedded in places and in local communities.

Frequently we observe spatio-temporal restructuration by norms as a form of institutional improvement. In this sense, the enlarged spatio-temporalities in the form of wide territories and long periods appear as the right approach to regionalization from the institutional perspective. Nevertheless, considered selectively, the whole world could be an adequate or an inadequate scale for framing the norm-oriented

action. For example in the case of human rights, the universal enactment of peoples rights and the universal definition of action as illicit, requires, in both cases, the global scale. In the instance of environmental issues, to extend the scales for measuring environmental damage obscures rapid and even disastrous consequences at the local scale. The extensive commodification of nature is based on a very permissive environmental normative, one rooted in an enlarged spatio-temporal framework. The transformation of the environmental institution will be shown in the subsequent part of the thesis.

Spatio-temporal restructuration from the perspective of communicative action constructs and derives its meaning from the social experience of time and space. Novel spatio-temporalities are the result of social negotiations of meaning for different places. The predominant form of territorialization derived from this type of action is based on a twofold structure of legitimate/illegitimate action, especially for spaces that are scarcely inhabited. For Werlen, this process of geography-making represents the symbolic appropriation of material things (Werlen 2004b: 156). Nonetheless, this theoretical project seems to be mainly concerned with the National State and not with the social conflicts occurring at the local level. The intersubjective construction of meaning in a context of accelerated social change requires the actors to revise the meaning. A constant negotiation of personal experience-interpretation in changing socio-cultural contexts (Bernasconi 2011b)[100] becomes a better point of reference for social inquiry. In other words, the intersubjective construction of communicative meaning and derived territorialization become problematic in the current context of socio-cultural transformation.

If we focus on the spatio-temporal restructuration as a consequence of communicative action in the cultural dimension, we observe a re-emergence of socio-ecological conflict. According to Campos-Medina and Larenas (2012), this kind of conflict appears because two contradictory orientations for action meet in the same place. In the case of environmental problems, the coincidence of place is astounding. For example, if we consider the case of a strong river, the river and its pure energy inspire

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[100] In words of the Chilean sociologist "However, the question of how individuals negotiate the interpretation of personal experience over their lifetimes in a changing cultural context remains unexplored." (Bernasconi 2011b: 20).

a native population to venerate their dead there. It is also the large amount of energy contained in the water that leads economic investors to contemplate its use for a mega-hydroelectric power station. These two opposing orientations for action meet at the same place and at the same moment. I will argue that this kind of intersubjective dissonance in the meaning attribution of place is as an increasing feature of late-modernity.

The actions organized via communication show similar capabilities of the previous two cases: rational action and norm-oriented action. In short, the three types of action break with history, relation, and meaning embedded in the places and local communities. Either explicitly or implicitly, spatio-temporal regimes are constructed across contradictory actions, representations and imaginations. Consequently, we can reassert the multi-level character of spatio-temporal structures in late-modernity.

This sub-section sought to develop the similarities between spatio-temporal restructuration and Werlen's theory of everyday regionalization. The section highlighted some analytical regularity between the study of different kinds of space and types of action, and different forms of spatio-temporal structuration.

This chapter illustrates spatio-temporal restructuration from the micro-scale. A provisional distinction showing the interplay between the structural levels, labeled spatio-temporal regime, with the intersubjective level labeled a spatio-temporal arrangement, serve as a point of entry for the argumentation. The analytical distinction between regime and arrangement is found in terms of the stability conferred to social action. In this sense, the distinction between arrangements and regimes abandons an abstract spatio-temporal characterization to engages difference at the pragmatic level. It is the stability to orient and maintain social practices and actions that better distinguishes arrangement and regimes. Stability definition relies on two conditions, i) an increase in the probabilities of certain types of action across time and space, and ii) a reinforcement of the social extension and scope of actions that re-articulate time and space.

5.4.- Chapter Five Summary; Spatio-Temporal Restructuration in Everyday Life Frameworks

Spatio-temporal restructuration has been commonly addressed by the social sciences from the macro-scale. Chapter 5 proposed a complementary route by emphasizing the emergence of spatio-temporal regimes starting from the micro-scale. Under the assumption that individuals are actively engaged in organizing the spatio-temporal structures that frame their life experiences, a dialogical relation between individual, society, and time and space emerges as the center of analysis. The structuration observed from the micro-perspective is not developed *ex nihilo* or as tabula rasa. On the contrary, a process of double contextualization and social delimitation has been highlighted as the core of the interaction between the level of society and the level of the agency.

The fictional narrative of Julio Cortázar and his description of the highway shows the capability of agency to generate novel spatio-temporal arrangements within given regimes. Individuals are capable of filling the motorway with novel representations, definitions, and functions. But this practice, even when acting in opposition to the social establishment, requires inherited meaning that is historically constructed and socially transmitted. In other words, different spatio-temporal arrangements are possible inside steadied spatio-temporal regimes.

The section, through the theory of social acceleration developed by Hartmut Rosa (2005b), approaches the temporal restructuration of modernity in the frame of a continuous process of negotiation between arrangements and regimes. The multi-level character of spatio-temporal structures in modernity is considered a suitable description of the spatio-temporal process of expansion and retraction, as are the tendencies toward synchronization and desynchronization. Therefore, the processes of social acceleration are complemented by decelerated phenomena in a narrative that allows for interaction between different spatio-temporal arrangements that do not need to be homogenous.

Understanding that spatio-temporal regimes and arrangements are both outcomes of social action can be articulated as the main conclusion drawn from revisions to the notion of everyday regionalization developed by Benno Werlen (1997). Arrangements

and regimes are not primarily differentiated because of spatio-temporal extension or scope. The difference between both concepts lies in their ability to stabilize different forms of social action, and in this sense, extension and scope of arrangements and regimes should be considered an outcome and not a precondition. The three types of space proposed by Werlen, with bases in Lefebvre, as perceived, lived, and conceived, are used to advance a taxonomy of spatio-temporal restructuration as mobilized by interpretation, action, or imagination.

The chapter contributes to the thesis argument by deepening the conceptualization of spatio-temporal restructuration in society. The main concern was not the analysis of explanatory devices (as was the case in the previous chapter). By contrast, and as a result of the phenomenological orientation of Rosa and Werlen, the reflection on spatio-temporal structures of modernity reaches the level of everyday life.

Spatio-temporal restructuration is understood as a heterogeneous process, rooted in the dialogical relation between arrangements and regimes. The micro-scale emphasizes the capacity of social action to modify – in terms of change, but also of maintenance – the spatio-temporal structures. The empirical analysis of the ecological modernization in Chile proposes to use these theoretical contributions in the second part of the thesis. The main intention of the empirical analysis will be to describe the consolidation of spatio-temporal structures in society as a consequence of the transformation of the social relation with nature. Although not addressed in this thesis, a further step would be to observe through empirical analysis the impact of this novel spatio-temporal structure in social praxis.

The empirical analysis uncovers a selective organization of spatio-temporal structures, in which the macro- and the micro-scale have been used to accelerate the expansion of the extractive industries. These economic enterprises are at the root of fast but uneven economic growth observed in the country since the 1990s.

Part One Conclusion

Spatio-temporal restructuration is both a transformation in the form of social science explanation, and a change to the spatial and temporal references of everyday life. Owing to the phenomenological turn, these two domains seem to approach each other, but the distinction remains. As transformation in the social explanatory device, spatio-temporal restructuration can be approached from the angle of the historical development of various disciplines, which actively shifts the spatial and temporal frameworks of the research objects, and their logics of explanation. As changes to the spatial and temporal reference of everyday life, spatio-temporal restructuration can be comprehended through descriptions of the distinctive spatial and temporal regimes that have historically organized social life. Spatio-temporal restructuration is a scientific commitment to enhancing social explanation, and it is also the direct effect of the (explicit or implicit) intent to reorganize common life by social actors.

In this work, I began with the intention to provide a description of modernity as a spatio-temporal restructuration. Incidentally, the results of this initial section provide something quite different: a sketch of spatio-temporal restructuration in the social science frameworks of analysis of the 20th century. Constructing an argument that successfully links – or one that weaves together the ropes that connects - the most significant theoretical tradition is obviously an incomplete task. The reconstruction has been partial and selective in terms of its theoretical references, but it has served its purpose to emphasize the spatio-temporal structures that underlie social sciences objects and explanation. The entry into the broader question of spatio-temporal structures of social science, a question that almost every sociological tradition tends to gloss over, has been fruitfully advanced.

"Spatio-temporal regimes collapse" was a sentence used in the first chapter as a narrative starting point to the sociological research in spatio-temporal restructuration. With this assertion, it is explicitly proposed that time and space have been distinctively and contingently organized across history, and also, it could be argued, throughout geography. By implication, if spatio-temporal regimes collapsed, other regimes would rise; after all, when some spatio-temporal structure decays, another takes its place. The argument states that spatio-temporal restructuration occurs as an

overall shift in the organization of social life. In this context the concept of regime was proposed. What does not follow from this perspective, however, is the claim for a unique spatio-temporal structure ruling the whole of society. Added to the conceptual framework appears the notion of arrangement to describe a multi-level condition. The intent was not to reduce spatio-temporal structures to a global abstraction, but rather, by incorporating the dialogical relation between regimes and arrangements, to illuminate the heterogeneous character of the spatio-temporal structures in modernity. Therefore spatio-temporal structures are composed of regimes and arrangements. Today, many readers would argue that spatio-temporal regimes have not been overcome, as a rapid reading of the notion of collapse may posit. What I have attempted to demonstrate was clearly the opposite: Spatio-temporal regimes are still present in social life, but in a constant dynamic of change and transformation.

Spatio-temporal regimes that tend toward de-territorialization and de-temporalization have been presented as a form of upheaval in advanced modernity, but they play a very pervasive ideological role. "Ideological," because in the past 30 years these types of narratives have only hidden the extreme efficacy with which social groups and social institutions control the production and organization of time and space. Therefore, the pervasive character of the current wave of spatio-temporal restructuration remains unseen in the discourses of de-territorialization and de-temporalization. Confronting these perspectives gains an important urgency.

One of the first attempts to study the role of time and space in social science can be found in the theoretical project of Marcel Mauss. In his proposal, the sociological discussion over the philosophical categories seeks to understand the origins of social reason and, at the same time, to define the disciplinary limits of sociology. More generally, Mauss's intention can be defined as a primary form in the sociology of knowledge. Time and space, in short, are considered stable inside cultural frameworks but changeable among them. This theoretical understanding has contributed to challenging two very ingrained ideas within the accounts of the social sciences: i) the notion of absolute time and space, and ii) the perspective of de-temporalized and de-territorialized social experience. Absolute time and space are rejected as a priori conditions of social life; instead, their articulation is considered a social product within long-term cultural processes. De-territorialization and de-temporalization are

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presented as selective phenomena but never as overextended social conditions. The act of moving away from the notion of absolute time and space and beyond de-territorialization and de-temporalization highlights a prerequisite for the conceptualization of spatio-temporal restructuration.

This discussion has asserted the emergence of spatio-temporal structures, and the social action at their base. Clearly, I have not dealt with the capability of spatio-temporal regimes to influence social praxis. There is no doubt that this question is of the highest importance, but I will argue that it is equally important to make an effort to analyze the structuration process of spatio-temporal regimes and arrangements. Nevertheless, the abovementioned failure can, in principle, be remedied within the underlying model developed here. Social action and praxis are considered substantial in three different moments of spatio-temporal restructuration: i) emergence, ii) maintenance and expansion, and iii) decline and transformation. Emphasizing one of these moments does not mean rejecting the others.

Sociology, unlike geography, seems to overlook the role of time and space in its theoretical explanations, and often it offers accounts in which no evident spatio-temporal structure is delivered. The theoretical understanding of spatio-temporal restructuration – in its double form of a type of social science explanation and a framing condition for everyday life – can contribute significantly toward a study of contemporary forms of social exclusion-inclusion and a consolidation of advantaged-disadvantaged territories. The second part of the thesis deals at length with this discussion and highlights spatio-temporal restructuration at the macro- and micro-level for the case study, which is the ecological modernization in Chile.

The macro-perspective makes visible the emergence of long histories and wide geographies as a primary form of spatio-temporal restructuration in social sciences. These only become possible by an epistemological process of enlarging and decentering inherited historical as well as geographic frameworks of analysis. The first traces of this type of analysis are found in Fernand Braudel's historical approach, in which macro-spatio-temporal restructuration is portrayed as an expanded, slowly constructed regime that is resilient to influence of daily action. Looking closer at this process, the search for an explanatory logic, within enlarged and decentered spatial

and temporal frameworks, becomes a cornerstone of theoretical explanation. The work of the Argentine economist Raúl Prebisch, with his proposal of the center-periphery analysis, clearly shows this logic of structuration inside the macro-narrative. An underdeveloped periphery and a developed core are both underlying structures of the global market. In this conceptualization, the macro-level accepts influences from lower scales only partially or selectively. Regional and global interconnections omitted by the historical approach are the phenomena that primarily mobilize the spatio-temporal restructuration of social sciences at the macro-scale. However, this does not mean that it is unique or the most relevant. Spatio-temporal restructuration at the micro-scale plays a fundamentally equal role.

Individuals are actively engaged in the organization of the spatio-temporal structures that frame their life experiences in a dialogical relationship between the individual, society and spatio-temporal regimes. This is the basic argument that supports the shift to everyday life experience of time and space in social science. From this point of view, a phenomenological perspective complements the macro-scale presented above. The social acceleration theory in the work of Hartmut Rosa, described as the major temporal restructuration in modernity, is balanced with a focus on the negotiated character of spatio-temporal regimes and arrangements. The main contribution in this endeavor is to emphasize the multi-level character of spatio-temporal structures in late-modernity, described as regimes and arrangements. Consequently, restructuration is no longer conceived as an overall condition with a predefined direction. In addition, low-level arrangements incorporate different spatio-temporal orientations into the macro-scale and include the heterogeneous character of contemporary spatio-temporal structures.

Spatio-temporal regimes and arrangements are both outcomes of social action. Using the perspective of everyday life regionalization defined by Benno Werlen, it is possible to argue that arrangements and regimes are not primarily differentiated because of their extension in time and space. The major difference between the concepts lies in their respective abilities to stabilize diverse forms of social action, and in this sense, extension and scope of arrangements and regimes should be considered firstly as an outcome and only secondly as a precondition of social life.

The first section of the thesis has contributed to widening the perspective of analysis on spatio-temporal restructuration in modernity. Enlarged and constrained spatio-temporal structures were presented as the macro- and micro-perspectives of analysis. As we observed, no spatio-temporal regime contains a predefined orientation for action, and its heterogeneous character should be considered one of its principal features. In other words, spatio-temporal structures are materialized in forms of regimes and arrangements, and social action and interpretation are the driving forces for maintenance and change. It is a matter of empirical research to determine how social action and interpretation, in historical and geographical contexts, consolidate spatio-temporal structures. The second part of the thesis profoundly engages this issue and observes spatio-temporal structuration as a result of the ecological modernization in Chile. As has been demonstrated, the analysis uncovered a selective organization of time and space within ecological modernization and responded to the role of the macro- as well as the micro-scale in accelerating expansionism of the extractive industries in the country.

PART TWO: EMPIRICAL RESEARCH.
ECOLOGICAL MODERNIZATION AS SPATIO-TEMPORAL
RESTRUCTURATION
THE CASE OF THE ENVIRONMENTAL INSTITUTIONAL
TRANSFORMATION IN CHILE (1990-2010)

Chapter Six: Methodological Construction of the Research Object: Ecological Modernization as Dispositive for Spatio-Temporal Rearticulation

Chapter Overview

The empirical part of the thesis describes the process of ecological modernization as a specific form of spatio-temporal restructuration in Chile between the years 1994 and 2010. The main argument is twofold; on the one hand it states that ecological modernization, as transformation to the national environmental institution, has the power to reorganize the society-nature relationship. On the other hand it proposes that a novel form of society-nature relationship at the national level is only possible by a redefinition of the categories of time and space. By combining both ideas, ecological modernization could be represented as a very pervasive engine for spatio-temporal restructuration.

There are three specific goals of this chapter: i) to frame spatio-temporal restructuration inside environmental policy as an object of research, ii) to describe other possible approaches to spatio-temporal restructuration explored throughout the thesis, and iii) to illustrate why environmental legal frameworks could be generalized as powerful input for spatio-temporal restructuration.

Chilean ecological modernization relies on the definition of a variety of mechanisms and procedures with the power to implicitly redefine time and space. The first wave of Ecological Modernization in Chile during the 1990s was mainly concerned with the definition of pollution management and rational use of resources. These definitions required making explicit the spatio-temporal frameworks to measure pollution, environmental impact, and the monitoring of natural resources extraction. The second wave of ecological modernization begun in 2010 has promoted the incorporation of economic mechanisms to regulate environmental conflict. Incentives of compliance and the market for pollution have been the two main tools in this process. Summarizing, the two waves of ecological modernization in Chile are based on a redefinition of the spatio-temporal frameworks, thus with the intention to make different forms of environmental compensation possible.

This chapter argues that time-space restructuration appears in the novel environmental framework in four forms: i) as a predominant discursive spatio-temporality to perform the scope of ecological crisis and to organize the political response, ii) as specific judicial or legal mechanism to evaluate, avoid, compensate, but also permit certain forms of environmental impact, iii) as a parliamentarian consensus, which de-politicize the socio-ecological conflict, confining it to pollution-only related problems and sustainable forms of raw material extraction, and iv) as the incorporation of market mechanisms to regulate socio-ecological conflict.

6.1.- Spatio-Temporal Restructuration in Environmental Issues as the Sociological Research Object

The chapter overview offers a very general idea of the orientation of the empirical part of the research thesis. Nevertheless, this description misses a central element of the essence of the sociological craft. That is: the definition of the research object is not spontaneous, but rather an obeisance to a reflexive process of construction. In other words, I arrived at the study of Chilean environmental legal framework through a search process for phenomena that would have the capability to illuminate signification of spatio-temporal restructuration. This re-articulation of time and space rests at the very basis of contemporary forms of social organization in modernity and in modern capitalistic societies.

The aforementioned process should be understood as the methodological opposite of strategies in which well-established fields of research are analyzed, at least in three impressions; i) in a reflexive or interpretative approach, the object of study is constructed with an aim, ii) because of its constructed status, the object must be defined and limited in its extent and significance, iii) since the sociological object embodies a purpose, it should be constantly proven in its potential to tackle relevant social phenomenon. Contrarily, in well-established fields of research i) the objects are not constructed, and therefore the empirical material should be recollected and managed in order to provide accurate information regarding the phenomenon, ii) the limits of the object are not under discussion, they are established by middle-range theories with a certain degree of variability but with a stable core, iii) the studied objects can be dispensed of without justified validity because they are recurrent forms of social inquiry and problematization.

In the case of this empirical research, the construction of the environmental legal framework as the sociological object of study for spatio-temporal restructuration should be understood as the culmination of a process of inquiry. Here, two alternatives have been attempted. In the first stage, the spatial and temporal transformation within the political sphere was addressed through analysis of the complementarities/dissonances of the intervention areas as selected by two public policies in the metropolitan region of Santiago de Chile (Campos-Medina and Arias 2011). In the second stage, the plausibility for understanding spatial and temporal re-

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articulation as a consequence of power relations in the decision making process and oriented for the approval of mega-projects was also addressed. These enterprises are associated with the extraction of raw materials and energy production in different parts of the world but especially in countries that could be defined as those with a rapid entrance into neo-liberal modes of regulation[101.]

In contrast to the two cases mentioned above, the empirical research understands transformation in the spatio-temporal frameworks within the historical context described by modernization of environmental law. In such a context it is possible to highlight the type of society-nature relationship and the social form that is produced in order to deal with the environmental conflict, stabilized in this case in Chile during the last 30 years. In this regard, the following periodization is proposed:

i)   During the 1980s the Chilean Supreme Court was the main actor responsible for regulation of the environmental conflict in virtue of the constitutional right to live in an environment free of pollution. In this scenario the introduction of the environmental law of 1994, while trying to coordinate different social actors' approaches to nature, could be interpreted as a de-politicization of the socio-ecological conflict because civil society is divested of its right to claim compliance with the constitutional right in court. The spatio-temporality of this form of society-nature relation could be described as the long lasting exploitation of nature by very pollutant actions in well-situated but wide areas.

ii)   In the nineties, the Law 19.300 of 1994 "Environmental Bases"[102] was presented in official discourse as an institutional improvement because it centralized different environmental functions dispersed within government. The central institution created to organize the society-nature relationship was the National Commission of Environment (CONAMA[103]). The environmental impact assessment

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[101] A reference to the French formulation of regulation theory by Aglietta (1997) Boyer and Saillard (2002 [1995])

[102] Commonly known as the law 19.300 of 1994 has been called "Environmental Bases", shortened from the "General Bases for the Environment". This name is a direct reference to the document written by the Latin American United Nations Environmental Program in 1993 "Proposal of Basic Law for Environmental Protection and Sustainable Development Promotion". Translation of the original names by author.

[103] CONAMA Comisión Nacional del Medioambiente

was the central procedure adopted to engage the environmental crisis and to regulate socio-ecological conflict. This legal institutional framework should be understood as a strong vehicle for spatio-temporal restructuration and as operating under two strategies. First, the consolidation of spatio-temporality of the regeneration of nature as the last frontier for exploitation, and second, the equalization of spatio-temporality to describe environmental problems and to define implementation of the political solution. The long lasting and pollutant exploitation of nature is replaced by an accelerated form of commodification based on the introduction of green technologies. The situated character of the extractive enterprise, in areas limited and observed in the previous period, is replaced by an extensive pattern of mono-production in wide and extended regions

iii)   The law of 2010, "Creation of the Environmental Ministry"[104], was a political action deployed to face critical evaluations made by the OCDE (OCDE and ECLAC 2005) in the report of Chilean environmental performance. If the first wave of ecological modernization in Chile was oriented to create a material base for the commodification of nature, the second wave has been oriented to extend speculative rationality in the environmental sphere by the creation of market-oriented mechanisms for dealing with socio-ecological conflict. This new legal framework could be understood as a strong impulse for spatio-temporal re-structuration since it is connected with a second phase of investment in extractive industries, one that seeks to double already extremely high levels of production. The accelerated character of exploitation is reinforced while territorial patterns of production consolidate the biggest productive cluster in national history. The socio-ecological conflicts are strengthened by the serious effects (repeatedly called simply side effects) of the extractive industries over local ecosystems and communities.

To summarize, spatio-temporal restructuration of the long lasting exploitation of nature, as one of the characteristic forms of society-nature relationship in Latin America, was accelerated by the process of nature's commodification derived from

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[104] The law 20.417 of 2010 is named "Creation of the Environmental Ministry, the National Service of Environmental Assessment and Environmental Superintendence" but is commonly referred to as "Environmental Ministry Creation". Translation of the original names by author.

both waves of environmental modernization in the Chilean case[105]. This process transformed the spatial regime of nature's exploitation from very well located areas of intensive raw material extraction to wide and extended regional clusters of mono-production. In other words, acceleration in extractive industry production reshapes the territorial dimension. As never seen before, widespread regions are emerging as the characteristic spatial pattern of green but accelerated extraction of natural resources. From this perspective the movement toward sustainable production in the big extractive regions is questioned, specifically because of the re-emergence of socio-ecological conflict in which different spatio-temporalities collide.

6.2.- Two Possible Routes for Exploring Spatio-Temporal Restructuration

In the section above, two possible routes for exploring spatio-temporal restructuration were mentioned. In the first case, political spatio-temporal restructuration was connected with public policy action and the definition of territories for intervention. The policies considered were the neighborhood regeneration program and the intervention in public schools with low learning results. Following Brenner (2009), the intention was to observe how temporality works inside processes of political rescaling, and in particular, how two different policies might articulate or de-articulate territorialities inside a specific historical span. Through analysis of the territorial patterns of the public policies, it becomes possible to describe unstable and changeable geographies of social exclusion in an urban-metropolitan context. By raising the concept of *transitory territories*[106] as a structural condition of contemporary public policy, it is possible to create a direct link with spatio-temporal

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[105] Waves of ecological modernization are different from waves of social modernization and should not be confused as such. The modernization of the environmental legal frameworks that has been defined in this thesis as ecological modernization is a novel social process. A plausible periodization for the developed world states that ecological modernization started during the seventies with the famous book "The limits of Growth" (Meadows et al 1972) commissioned by the club of Rome, which strongly criticizes the model of economic growth. This appears clearly in the eighties by promoting environmental management as opposed to the so-called *end of pipes* policies. Here, Brundtland report commissioned in 1987 becomes central. Furthermore, since the end of the 1990s, ecological modernization has been very pervasive in supporting the consolidation of market mechanisms to regulate the environmental crisis. The influence of international institutions such as the Organization for Economic Co-operation and Development (OECD) is essential during the last two decades.

[106] The articulation of all governmental actions, programs and policies in a given territory, expressed as a particular form of spatio-territorial organization, is what I call the *transitory territories*. This is in opposition to more stable forms of intervention, for example, the notion of territorial equalization promoted by a Keynesian State. *Transitory territories* are places very limited in their territorial extension and only relevant in short time-span for governmental action and population. For a comprehensive account of the Keynesian State see: Margaret Weir and Theda Skocpol (1985)

restructuration processes.

An initial approach to this task involves inquiry into scale differentiation and subsequent rescaling of specific State policies (for instance, housing, employment, innovation or monetary policies). Here, the notion of rescaling refers essentially, to a policy trajectory. A second approach to the periodization of State rescaling involves examination the evolving scale articulation of a particular institutional – territorial space — be it a supranational regulatory agency, a National State, a region, a city or a cross-border zone. Here, the notion of rescaling refers to a process of institutional reorganization (Brenner 2009: 135).

In the second case, the core phenomenon was the social process that unfolded in order to obtain legal approval for five mega hydroelectric power stations in the Chilean Patagonia for the project known as Hydro Aysén[107]. Following Zunino (2006), the intention was to understand the power configuration that emerged as a product of strategies deployed by public and private actors. These strategies are acting at different social levels – structure, institution and agency -and seek to increase the probability for legal approval and to ensure the future materialization of the project. Relevant for the approach was to highlight how this kind of enterprise indicates capital-fixation in times of high devaluation of money due to the international economic crisis[108].

[…] The neoliberal reform initiated by General Augusto Pinochet stimulated major changes in the political, economic and social realms. While political issues become marginalized, scientific methodology and positivist science acquired a predominant role in the decision-making processes. Democratic governments that followed the authoritarian administration (Patricio Aylwin 1990-94, Eduardo Frei 1994-2000 and Ricardo Lagos 2000-06) did not substantially alter the scenario, maintaining fiscal austerity and incrementing opportunities for capital accumulation via free trade agreements signed with US, the European Union and several Latin American countries […] the number of actors involved and the political implication resulting

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[107] See http://www.hidroaysen.cl/eng/
[108] Here, the argument relies on the concept of *Spatio-Temporal Fix* developed by Harvey (2003). For a comprehensive understanding of this concept, *Switching Crises*, and *Accumulation by Dispossession*, see Arrighi (2006)

from being backed by influential political figures (including potential president candidates), led to the formation of an informal decision-making entity (a negotiation table) that resembles urbanization practices beyond the city limits (Zunino 2006: 1826).

It is my conviction that the aforementioned research programs have the potential to express important social transformation. Nevertheless, it was difficult to raise the argument originating from these programs because spatio-temporal restructuration works as the historical and geographical context for other more specific social phenomena. What emerges strongly from the public policy analysis is a geography of exclusion created in the metropolitan area of Santiago de Chile, which acts as a perverse spatio-temporal articulation between deprived neighborhoods and vulnerable schools. In other words territories are defined by the public policy as targets of intervention, what is typically considered an *area-based approach*[109]. In this sense, it becomes only secondarily connected with the territorial and temporal dimensions of urban social exclusion. In the case of the mega-project Hydro Aysén, the situation is similar. The variety of strategies deployed by social actors does not all pursue a spatio-temporal re-articulation and for that reason, the phenomenon loses explanatory potential. The analysis was organized at three different social levels that influence the decision-making process in environmental issues. These are structure, institution, and agency.

At each of these three levels the task might be to highlight concrete strategies that could express the power component of social relations. At the agency level, strategies refer to social actors and how they come into relation: i) multi-role actors, ii) concentration of power in particular actors, and iii) saturation of governance networks. Multi-role actors are understood as particular persons or organizations representing more than one interest of the governance network. This is typically the case of certain experts publicly presented as: international academics, national professors, politicians or representatives of political parties, ministerial assessors, and also private consultants. The idea of power concentration refers to a social strategy

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[109] Here, the traditional difference in public policy analysis is between area and people-based orientation. In the former, it is the territory that acts as articulator of different social programs, in the latter, the persons are those who receive social benefit.

that increasingly gives relevance to certain actors that, in fact, represent only one organization or one interest regarding environmental issues. This is normally the case for company representatives that promote the aforementioned mega-projects. They are relevant personalities at the national level with high capital in social legitimacy. The notion of governance network saturation expresses how different actors can influence the decision making process in order to create a false dichotomy between approval and disapproval. This situation manifests by an eschewal to discuss the plurality of technical solutions in energy production or natural resource exploitation.

At the institutional level three strategies are also presented: i) The declining role of the State and the privatization of public policy actions. This is in order to tackle how some compensatory actions in the approval of mega-projects represent more investment in deprived territories than all public policy interventions carried out by the State historically; ii) The defense of institutionalism as a means to avoid institutional development. This conceptualization seeks to explain strategies followed by powerful groups in order to maintain a weak institutional field for the decision-making process; and iii) The creation of spaces and procedures of compensation. This tackles institutional stabilization of reparatory arrangement in environmental issues as a way to conciliate the economical imperative of growth and the ecological principle of sustainability. Summarizing, the social struggle for spatio-temporal restructuration is rather marginal inside a social phenomenon where power exerted by governance networks and institutional arrangements are fundamental variables.

6.3.-Environmental Legal Frameworks as a Case Study of Spatio-Temporal Restructuration

An explanation has been advocated to clarify how a sociological object of study is selected from other possible phenomenon of social inquiry. In this process, nothing has been tabled in regards to the reflexive operation that leads to the emergence of a particular research phenomenon in its entire significance and scope. Therefore, illustrated in the following section are: i) the sociological relevance of the research object construction, ii) particularities of this enterprise, and iii) how this reflection will clarify the empirical questions and the methodological approach. Before continuing I wish to state that the given explanation of other possible phenomenon of research – public policy articulation in a metropolitan area and power strategies in

environmental decision making - are considered sufficient argumentations for their dismissal as a central core of investigation. The interpretative pay-off contained within the study of the environmental law, understood as a particular dispositive of time-space re-articulation, is by every means higher. The Chilean legal environmental framework as a discursive reality allows a capturing of spatio-temporal restructuration in all its facets, with its own strategies, struggles, stabilization, tension, and ruptures.

The dialogue between Pierre Bourdieu and Loïc Wacquant from "An Invitation to Reflexive Sociology", and especially the second part, "The Purpose of Reflexive Sociology, The Chicago workshop" (Bourdieu and Wacquant 1992) will be used as a referent to construct a coherent discourse regarding the sociological process that defines a reflexive or interpretative research object. It is important to note that the epistemological project of Bourdieu can also be tracked in other majors work such as, "The craft of sociology: epistemological preliminaries" in which he refers to the formulation of sociological knowledge in Gaston Bachelard's terms: "Facts are conquered [through rupture with common sense], constructed, confirmed" (Bourdieu et al. 1991: 24). In a free reformulation of the last statement it is possible to say: the sociological object of research is an achievement, is constructed and should be constantly confronted with its capability to offer plausible sociological answers.

In the following paragraphs a group of theses will be summarized as those most relevant in the definition of the sociological research object. Following, they will be used to better organize the approach to the study of environmental legal framework, which should be understood as one of the most important institutions in performing the relation between society and nature.

1.	The construction of a sociological object of research implies a break from the common sense. In other words, to build up, reflexively, a sociological phenomenon of research that comprises a process of questioning the obvious and takes for granted conditions of social reality.

2.	The construction of a sociological object of research is the consolidation of a case study. The case study should be understood as a single and particular social reality that collects so much relevance regarding its own conditions that it sheds light

on a major number of cases. "A particular case that is well constructed ceases to be particular" (Bourdieu and Wacquant 1992: 77).

3.   The construction of a sociological object of research should be understood as a double process of delimitation; firstly, in respect to other social phenomenon, and secondly in respect to its own limits of influence and meaning. In other words a reflexive sociological phenomenon calls into focus the logics that rule it and therefore determine its limits of influence.

4.   The temporal limits of the construction of the sociological object should be considered as part of a historical development. The spatial limits of influence of the sociological object are at the same time territorially and socially deployed through time. In other words, the social limits of a sociological object of research are temporal and territorial in the same way that spatio-temporality is socially produced.

5.   A sociological object of research is not an objective reality. On the contrary, it is the result of a process in which the relation between the researcher and interested vision of the social world should be guarded.

Perhaps for an experienced social scientist there is no novelty in breaking from common sense in order to put forth a sociological object of research, but in the case of institutional transformation this situation becomes particularly relevant.

The environmental legal framework appeals to common sense as the necessary and natural reaction by the national and international society (World society[110]) to the challenges of environment protection. In the following I wish to point out a very subtle but fundamental distinction between necessity and spontaneity. The case of

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[110] The concept "world society" is used by Daniel Chernilo and Aldo Mascareño in the paper "Universalismo, Particularismo y Sociedad Mundial; Obstáculos y perspectivas de la sociología en América Latina" where the authors states: "Nowadays, at the beginning of XXI century, this means describing contemporary society as world society: there are no particular areas of the globe that escape the pressure for policy integration under a universalist and cosmopolitan criteria or for structural coordination under the requirements of functional differentiation". Original text in Spanish "Hoy en día, a inicios del siglo XXI, eso significa describir la sociedad contemporánea como sociedad mundial: ya no existen regiones particulares del globo que escapen a la presión por una integración normativa universalista bajo criterios cosmopolitas ni a la coordinación estructural bajo las exigencias de la diferenciación funcional." (Chernilo and Mascareño 2005: 17). Translation by the author.

environmental legal framework does not appear as spontaneous, that is, emanating immediate social reality for the majority of people. On the contrary, it could be very easy to argue for its constructed condition meant to tackle specific problems. Nevertheless, this character is easily forgotten by the necessary condition of the environmental legal frameworks in the context of ecological crisis in popular opinion[111]. Therefore, it is not so simple to go against the strong belief of adequacy that consolidates it and in the same process, claim space for sociological criticism in the formation, maintenance, and evolution of environmental institutional frameworks. This should not be considered an exclusive condition of the environmental institution but a general characteristic of our social institutions. In this sense, the sociological principle expressed by Bourdieu and Wacquant on breaking from the common sense should be reformulated in order to challenge the adequacy character professed by our social institutions and mainly by our environmental ones.

Following this, it becomes possible to connect the second argument. The environmental legal framework understood as a case study has the possibility to refer to a broader set of fundamental sociological questions, and in this sense could be suggested as ceased in its particularity. The aforementioned institutional problematic opens up a set of relevant sociological questions i) how value judgments are contained in the legal framework, ii) how they have been discursively constructed, and finally iii) how they operate by hegemonizing the social representation in a particular arena. In this context of analysis the Weberian distinction between value judgment and reference to values becomes central for confronting the extended condition of necessity and adequacy of the environmental legal framework (Weber 1904). Thus, **it** allows for the distinction between the level of advocacy or the social intentions behind public policy and the level of description as the empirical evaluation of the implementation of a policy.

Other fundamental sociological distinctions appear whenever environmental legal framework is confronted with the question to compensate environmental impact. In

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[111] The notion of *necessity* and *necessary condition,* are used here in close relation to the philosophical sense. In philosophy a necessary condition for some state of affairs A is a condition that must be satisfied in order for B to be obtained.
Retrieved from Internet from Wisconsin-Madison University Department of Philosophy- Available in Internethttp://philosophy.wisc.edu/hausman/341/Skill/nec-suf.htm

seeking a compensation formula, abstract mechanisms to measure and repose certain environmental losses are deployed. The construction of a mediating element, which allows for the comparison of the different substantive realities, becomes a central device. In this sense the explanatory possibilities offered by Georg Simmel's approach to the philosophy of money, developed by the German sociologist at the beginning of the XX century, are still very relevant (Simmel and Frisby 2004).

Finally, from a traditional sociological perspective, a third sociological perspective in which the environmental legal framework could be rendered is the notion of social conflict. In this theoretical framework, it becomes pertinent to explore the democratic condition as antecedent as well as result of modernization in environmental legal frameworks. A lack of democracy seems to appear as a central issue whenever the modern institutions of National State and liberal market mechanisms, both under managerial logic (Harvey 1989), colonize territories and domains not ruled by them previously (Habermas 1987a, Dörre 2011)[112]. For the environmental institution, it highly probable that under the guise of expert-scientific coordination, processes of de-politicization occur under pressure exerted at the international and national levels

The discussion of the limits of the sociological object of research is perhaps the most difficult within this brief revision because there exists at least two causes: i) it requires the consideration of the logic of the field in which time-space is restructured or in other words, how spatio-temporal restructuration might be considered analytically as capital in terms of Bourdieu's theory (Bourdieu 2010), and ii) it involves the portrayal of the ways in which spatio-temporality is articulated by social actors, in a plausible narrative[113] as well as feasible social practices.

The perspective adopted by the thesis, that the environmental normative, should be understood in three forms: i) as an allegoric discourse about the society-nature relation, ii) as a set of instruments and mechanisms to manage the society-nature

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[112] Here, the argumentation follows two explanatory lines, from one side, the idea of *lifeworld colonization* developed by Jürgen Habermas in The Theory of Communicative Action vol. 2 (Habermas 1987a) and the explanation made by Klaus Dörre (2011) of the notion of *Landnahme* in its double condition of territorial space as social domain.

[113] *Plausible* here is not used in the way of coherent. Discourses about time-space are indeed contradictory and they may lack formal logic. Nevertheless, its power rests in the capability of being acceptable for the common sense and in their ability to exclude other alternative speeches.

relation and, iii) as social struggle for the representation of ecological problems and possible solutions. Allegoric discourse expresses how environmental law is far from being an objective set of scientific statements, and on the contrary, it constantly produces and re-produces images that require a critical analysis. Thus, the allegoric means a condition that calls for interpretation in terms of accuracy. A set of mechanisms and instruments is the approach to the active dimension of the environmental law, as long as desirable, avoidable, and possible actions inside the society-nature relationship are established. They call for an interpretation in terms of adequacy. The social struggles acknowledge the contested character of environmental law, and calls for interpretation in terms of legitimacy.

From a general perspective, environmental institution modernization should be considered as one of the most relevant forms in which time and space have been restructured in the last forty years in developed western societies, and since the 1990s in many regions considered as belonging to the periphery. The intention of the empirical approach is to demonstrate that the study of the temporal and spatial restructuring processes, promoted explicitly or implicitly by ecological modernization, are indeed a source of inquiry for the social limits of meaning and influence of a sociological object. It is, in fact, no longer possible to understand the sociological significance of the environmental normative without an in depth account of the temporal and spatial regime under social dispute. In this sense the limits of meaning of environmental law are by no way confined to the natural sciences or to the ecosystem. In contrast, they are very pervasive in the social and political sphere. Here concepts like: ecological modernization, economic sustainability, environmental sustainability or even, governmentality, are relevant because they have the capability to connect the natural and social perspective.

At this state of the argumentation the critical perspective with which this research approaches the study of temporal and spatial structuration in environmental legal issues should be clear. Nevertheless, some further clarifications are in order: i) Derived from the theoretical, I propose a strong case for arguing modernity could be explained as temporal and spatial restructuration and account for continuous transformation in its own spatio-temporal structures. This process of transformation strongly affects the everyday life of social groups and communities. This is especially

the case outside of the western core of the world. ii) This phenomenon of time-space restructuration can take different forms, but one that is particularly negative from the thesis perspective is the increasing possibility to organize socio-ecological conflict in a speculative manner by stressing the material spatio-temporality of nature regeneration as the last frontier for production, and by organizing the abstract spatio-temporality of environmental markets as the new field for economic growth. Nevertheless, what seems to be clear is that this institutional transformation creates increasing pressure over local ecosystems in the natural, human, and social component. I will come back to this argument in the following sections.

Contemporary or late modernity appears as a strong wave of temporal and spatial restructuration in diverse and heterogeneous forms all over the world. That said, some scholars would advocate that this process is just the fate of the contemporary society. In a similar way that the natural scientist may still render global warming as just a natural cycle of weather in the long run. In opposition, this research starts from the hypothesis that every wave of spatio-temporal restructuration acts as a driving force for social differentiation by unevenly distributing opportunity and damage. Furthermore, one of my basic concerns is to challenge the common idea of temporal and spatial transformation as an inevitable fate or as a necessary social process. By recomposing a critical perspective in which the human consequences of spatio-temporal restructuration are at the center of the sociological debate, strength is gained.

In the following chapters the empirical research is organized as five parallel processes: i) the methodological approach is formulated in detail; ii) the empirical approach to spatio-temporal restructuration in the environmental legal framework is outlined inside narrative analysis and critical discourse analysis; both perspectives are applied to ecological modernization; iii) the Chilean national context will be detailed from a double perspective; from one side, economic, political, social, and environmental contexts between 1980 and 2010 are tabled. From the other side, the social narratives of socio-ecological conflict evolution during this period are presented; iv) the perspective of relevant actors in this period: civil society, local community, academics, and politicians are analyzed through a narrative perspective; and v) critical discourse analysis is applied to environmental legal frameworks enacted by the law 19.300 of 1994 and law 20.417 of 2010, emphasizing the spatio-

temporal restructuration process. Relevant here is the intention to portray spatio-temporal restructuration contextualized in the first National State outside of the western core, one that assumes a neo-liberal mode of regulation. This example offers useful insight for other countries intending exploitation of commodities and natural resources integration for the global economy.

The description of the Chilean national context presents some relevant information with which the reader might better understand the process of environmental modernization in the country. Relying on the twofold condition of this chapter, it has been possible to consistently attach to the inherent and tensioned character of ecological modernization. Wherever one looks, the fact is that the conditions of ecosystems did not improve but deteriorated in the last three decades. Besides singular improvements in contamination control and rational uses of resources (if these did really occur) the agglomerated effects of extractive industry growth has reinforced latent socio-ecological conflict for scarce resources, productive inputs, and living condition across the country. With this information in mind, I pose two arguments: First, environmental institution modernization in Chile has in the last two decades meant an astonishing growth in extractive and plantation industries, where even the word "exponential" should be reassessed for its capability to express the extent of change. Second, modernization of the environmental institution in the country cannot be divorced from an increasing process of de-politicization of socio-ecological conflict, resulting in the re-emergence of social protest and the criminalization of opponents to mega projects related to energy production or natural resources extraction. The following quotation from my previous work is an illustration of this.

"[Ecological modernization in Chile is understood as depoliticization because it implies] a constant reduction of the public and social character of the ecological debate. The new environmental institution represents the access of modern procedures to the ecological management as well as the exclusion of previous forms of socio-ecological conflict regulation." (Campos-Medina and Larenas 2012: 49)[114]

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[114] Original text in Spanish: "[Modernización ecológica en Chile es entendida como despolitización porque implica] una reducción constante del carácter público y social del debate ecológico. La nueva institucionalidad ambiental representó tanto el acceso de formas modernas de gestión ecológica, como

Chapter Seven: Methodology

Chapter Overview

Different analytical tools have been proposed in the field of sociology to examine the social conflicts produced by specific forms of modernization. Nonetheless, the question of how diverse forms of individual action interplay with social structures in the organization of spatio-temporal regimes remains lacking a systematic exploration. This section introduces spatio-temporal restructuration as a sensible perspective to conduct inquiries into current waves of modernization. By approaching the ecological modernization process in Chile, the empirical section argues that while transformation in the environmental legal frameworks tends to re-organize the society-nature relationship, a strong impact is exerted over the social form in which time and space are represented and organized.

This methodological chapter begins by approaching two questions: How does ecological modernization influence transformation in the spatio-temporal dimensions? Why is a qualitative path a suitable to approach the influences of ecological modernization in the spatio-temporal restructuration? Following this, i) the type of analysis, ii) the dimension of the analysis, and iii) the empirical sample is presented in detail. In the end, the objective of the empirical inquiry and the expected results are discussed.

The empirical approach proves successful in constructing a coherent and plausible periodization of ecological modernization in terms of spatio-temporal regimes and its further changes. The stability of inherited spatio-temporal articulation is challenged by an inquiry sensible to multi-level spatio-temporal restructuration, which combines forms of: i) expansion-retraction, and ii) acceleration-deceleration.

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la exclusión de formas previamente existentes de regulación del conflicto socio-ecológico." (Campos-Medina and Larenas 2012: 49). Translation by the author.

7.1.- Considerations of the Object of Research and Methods

As a way to introduce the methodological approach of the thesis, two questions are identified. Through discussion the nature of the research object and the orientation of the inquiry appear: i) How does ecological modernization influence transformation in the spatio-temporal dimensions? ii) What are the advantages for using a qualitative approach to study the influence of environmental institutional transformation in the re-organization of the spatio-temporal dimension? Before addressing these two questions a first argument is offered.

The current wave of transformation in the environmental institution, which started in the 1970s for the advanced economies of the world and has been embraced since the 1990s by the emergent economies, could be considered a very strong engine for the re-articulation of the spatio-temporal dimension. Because the novel form of society-nature relationship proposed requires and implies: i) a different representation and definition of nature and its components; ii) a novel dispositive to measure environmental impacts and compensation of damages, and iii) new mechanisms to allow and/or constrain different forms of action over ecosystems.

In other words, ecological modernization, while trying to reorganize the form of relation between society and nature, explicitly or implicitly changes the meaning, representation, mechanism, actions, practices, and even the non-thematized routines of social life. These dimensions are all elements organizing the stable character of time and space.

How does "ecological modernization" influence transformation in the Spatio-Temporal dimension?

Spatio-temporal re-structuration is not a science fiction phenomenon. Under this concept there exists no watches running faster or slower, neither empty geographies where territory disappears. Simply here it is proposed that the spatio-temporal dimension of social life can be organized differently. And this different way is precisely the object of research. In other words, the phenomena that should be analyzed, illustrated, and demonstrated.

Ecological modernization as a motor of spatio-temporal restructuration means that the transformation to the environmental legal framework will affect the organization of the spatio-temporal dimension. Environmental law that defines new forms of society-nature relationships requires particular articulations of time and space.

The concept of ecological modernization has been understood by several scholars as public policy and social discourse, which seek to resolve the empirical contradictions between economic growth and environmental protection (Hajer 1996, Mol et al 2009). The transformations to the Chilean environmental institution become part of this international process and appeal to extractive industries to incorporate sustainable measures. This transformation to the mode of production remains trapped inside a framework of industrial expansionism. No measures have been taken in order to restrain the accelerated growth of the extractive industries in production and territorial extension.

The argument shows the following structure: i) ecological modernization in Chile has been at the basis of expansionism for the extractive industries, which are the most important sources of economic revenue in the country; ii) the expansion of the extractive industries requires an understanding and organization of time and space that promotes development, not constrain it. In other words, the ecological restriction (Raza 2000) understood as a limitation to the production will be adapted or even manipulated by the transformation in the spatio-temporal frameworks that gives meaning to social action; iii) the spatio-temporal restructuration leaves traces in society and is exactly the case for re-emergence of socio-ecological conflicts. Not only do two different perspectives towards nature clash, but also, two contrasting forms of spatio-temporal organization. These three situations will be explained in detail in the following.

The connection between ecological modernization and industrial expansionism is demonstrable for each wave of transformation in the environmental legal framework in Chile. For example, during the first wave of modernization deployed in the 1990s, and looking specifically at the case of mining activity, one can indicate the increasing number of big mines. There was a significant growth from only five mega projects to

more than twenty in one decade. In the second wave of ecological modernization the mining sector proposed duplicating the national copper production by the year 2020. This situation of constant expansionism shows no contradiction with the requirement made by the Organization for Economic Co-operation and Development (OECD and ECLAC 2005) to incorporate economic mechanisms to regulate emissions and pollution. On the contrary, we could argue that it is only possible by these means.

To illustrate the connection between the extractive industries' expansionism and spatio-temporal restructuration, one can observe the main spatio-temporality promoted by the environmental law and the mechanism that it deploys. During the first wave of ecological modernization, the political system was an active agent in the promotion of industrial growth. Governmental speeches would mention: "Chile needs to mobilize its natural resources", "the incorporation of ecological standards will only be gradual" (Aylwin 1992) and even more radically "the development would not be jeopardized by ecological considerations" (Frei 1997)[115]. In this context, the main dispositive created by the first environmental law to restructure time and space were the following: i) the definition of environmental capability of ecosystem regeneration as the frontier for production; and ii) the gradualism and slow incorporation of environmental restriction to production as form of regulation.

During the second wave of ecological modernization the situation changes. The re-emergence of socio-ecological conflicts and the worsening in conditions of the international market decelerated the pressure for growth in the extractive industries. Nevertheless, the main dispositive for the spatio-temporal restructuration was to center the ecological discussion in environmental management and no longer in the cases and episodes of conflict. In order to gain efficiency environmental management requires a set of spatio-temporal arrangements. At least two become prevalent: i) the spatio-temporality of compensation as a mechanism for the desingularization of place (Augé 1992); and ii) the predictability of economic scenarios over the consideration of stabilities in social and environmental scenarios.

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[115] Original text in Spanish: "Chile necesita movilizar sus recursos naturales", "la incorporación de estándares medioambientales se hará sólo de manera gradual." (Aylwin 1992) "El desarrollo no será amenazado por consideraciones medioambientales." (Frei 1997). Translation by the author.

With the intention to clarify how spatio-temporal restructuration within ecological modernization reinforces the tensions between economic improvement and environmental care, the re-emergence of the socio-ecological conflict offers a line of argumentation. From the perspective engaged in this research, the basis of the socio-ecological conflict in Chile is not pollution or environmental management at the level of peoples and companies. On the contrary, the problem is the scale extractive industries –mining, fishing, aquiculture, and forestry- have prevailed upon during the last three decades. When this scale is actifyed, there is very little chance to protect the local ecosystem, ways of living, and traditional economic activities. Therefore, the socio-ecological conflicts appear connected to all basic resources: energy, water, land, and labor.

The big scale and long periods proposed by economic activity to measure damages contrasts with local communities based in shorter spatio-temporal horizons. The acceleration of time promoted by industry becomes incompatible with the human capability to adapt its behaviors in the short run. The selective organization of the territory by the environmental policy lacks an integrated character that effectively regulates social actions and impacts.

7.2.- A Qualitative Approach to Understanding Influences of Ecological Modernization in Spatio-Temporal Restructuration

In order to introduce a discussion of the qualitative approach a second argument becomes relevant. The influence of ecological modernization on spatio-temporal restructuration could be measured in quantitative terms, however bringing little information regarding causes and meanings of novel spatio-temporal regimes.

For example, if our concern is global warming a question like the following becomes relevant: how are the changing patterns of CO_2 emissions at the national level? If the focus lies on pollution control we can ask for the performance of economic mechanisms introduced by the political system to reduce emission of gases, liquid and solid waste. If the aim is to understand the environmental consequences of economic development, we could quantitatively measure expansion or relocation of industrial activities – extractives for the world periphery and productive for the central

economies.

Nonetheless, these questions barely approach the spatio-temporal restructuration provoked by transformation in the environmental national institution. Instead, a qualitative approach allows us to inquire into a dense constellation of meanings behind ecological modernization. At the same time, it allows us to illustrate how different social actors understand, as well as, how distinctive social institutions portray the transformation in the spatio-temporal dimension. In this way we are able to tackle a fundamental sociological question: how it becomes possible that in a social, and international context, one increasingly concerned with environmental protection and control of negative effects on environment, does the commodification of nature and the deterioration of the living conditions for local communities become strengthened. This question is by no means a quantitative inquiry and it addresses the contradictory character of social life in modernity.

7.3.- The Empirical Approach

To approach the spatio-temporal restructuration provoked by ecological modernization, two levels of analysis have been considered: i) The new environmental laws, which for the case of Chile are: the Environmental Bases (19.300/1994) and the Creation of the Environmental Ministry (20.417/2010); and ii) The social actors' perspective regarding Chilean environmental reform, which highlights the difference between political actors' evaluation of Chilean ecological modernization (academics, politician, policy makers in Santiago de Chile) and social actors' representation of socio-ecological conflicts between the mining industry and the local community (academics, local authorities and Atacameños and Aymara communities of the Atacama Desert, in the northern region of Antofagasta).

7.4.- Two Levels of Analysis: Critical Discourse Analysis and Key Actor Narratives

Key Actor Narratives

The spatio-temporal restructuration provoked by ecological modernization has social consequences. To analyze these consequences from the perspective of the social

actors will allow for a better interpretation of: i) the influences of the national context not only at an environmental level, but at the economic, political and social levels as well; ii) the people's perspective and not only those of the researchers, for it is useful to distinguish and emphasize the type of environmental struggles with more relevance; iii) the tension that the environmental reform provokes between extractive industrial expansionism and the local community.

If we want to engage the analysis of the actor's perspective regarding Chilean ecological modernization, one cannot directly address the question of spatio-temporal restructuration. Using a phrase of Marx, popularized by Pierre Bourdieu, this would be to "confuse the things of the logic with the logic of the things". The principle of explanation of the spatio-temporal restructuration is not explicit fact in actor narratives. It is a sort of conceptual abstraction, which may not be self-evident from the perspective of the people.

The actors' narratives are primarily concerned with representation of the environmental problems. Environmental concern is what motivates the political actors to propose changes to the legislation. In a similar way, it is the environmental conflicts that motivate civil society to pressure for reform. Nevertheless, environmental concern and environmental conflict are not synonymous. Rendering of ecological problems is always socially mediated, and for that reason, dissonance between political and social actors is expectable.

The socio-ecological conflict is proposed as a more comprehensive perspective because it connects both environmental and social issues in the analysis. From this perspective not only ecosystem damage is relevant for public policy, but also the capability of adaptation and the resilience of the community. As mentioned above, the socio-ecological conflicts are a "special lens" to highlight how the spatio-temporality promoted by the new environmental legislation interacts and on many occasion collects with the spatio-temporality of the community. Socio-ecological conflicts are the traces and vestiges of spatio-temporal restructuration that unevenly distribute social benefits and damages.

Discourse Analysis

Ecological modernization, as institutional change, runs firstly at the political level. The endorsement of a law in the parliament is a discursive social reality, which has at least three advantages for the social analysis: i) it is performative, in other words, language creates reality; ii) it reproduces the social struggle to represent and understand nature; and iii) it shows practical definitions as well as mechanisms and dispositive, which together will reshape the social reality.

If we want to engage the analysis of a discursive reality in terms explicated by Foucault, a set of clarifications are in order. The active role of the discourse in terms of power, as the French author proposes, is a fundamental feature. "Discourse is not simply that which translates struggles or systems of domination, but is the thing for which and by which there is struggle, discourse is the power which is to be seized" (Foucault 1971 [1973]).

The environmental legislation is not simply a vehicle to translate social struggle, because of its performative character, it is which and by which there is struggle (Van Dijk 2001). In this sense, the environmental law, due to its capability to reorganize time and space, could be represented as a very strong source of power.

The discourses, as well as the practices, are not self-evident or legitimized, per-se. The question regarding environmental legislation should not be concerned with the altruistic intention to take care of nature; on the contrary, it should address how we are, precisely, taking care of nature. Only through this analysis does it become possible to embrace the spatio-temporal regime that a novel environmental legislation promotes. The definitions and mechanisms enforced by law to take care of nature are the dispositives that deploy spatio-temporal restructuration.

In the end it is important to consider that the abovementioned discourse regimes are only selectively connected with institutions and ideologies. Environmental legislation is not a complete method to address sets of practices, and because of that, requires framing inside a historical constellation. The social practices are without any doubt influenced by laws but under no circumstances totally determined. The discourse analysis oriented to spatio-temporal restructuration -provoked by the ecological

modernization- requires another source of information to bring about evidence of social struggles, which are coextensive to every new form of society-nature relationship.

7.5.- The Sample and the Organization of Analysis

Interviews with Key Actors From an Interpretative Perspective

With the intention to address the actors' perspective regarding the national context and the social consequences of the ecological modernization, the thesis produced and works with a sample of 26 interviews divided in the following structure:

i) High level politicians 1, ii) ministry policy makers 5 iii) university academics 8, iv) local authorities 2, v) civil society NGOs 1 vi) local community 7. In another categorization, thirteen interviews were made in the capital city of Santiago and another thirteen in the region of Antofagasta, in the northern part of the country. Ten of the interviewees were female and sixteen were male.

The interviews are defined as semi-structured; two of them were of contextualization with an academic specialist in Environmental Sociology and a Central Bank functionary. These two reports helped better to define the areas of interest for the following interviews. The interviews in Santiago were conducted mainly during a fieldwork trip in March-April 2012, with the exception of the two interviews with high-level politicians that were conducted during the last months of 2013. In addition, the set of interviews collected in the Antofagasta region were conducted during a trip to this area in October 2012. In the following sections, the main topics addressed by each type of interview are explained.

i) Contextualization Interviews

The contextualization interviews seek to generate an overview of the socio-territorial impacts produced by the new environmental normative in Chile. The interview made with the academic specialist in environmental sociology has focused on the capability of the new environmental institution to regulate socio-ecological conflict. Special attention was paid to the Environmental Impact Assessment (EIA) as a political tool.

The interview with the Central Bank officer outlines the influence of economic activity on national environmental performance. Attention has been given to the description of the economic role of the extractive industry and, particularly, the mining sector of Chilean economic performance and the growth of the Gross domestic product (GDP).

ii) High Ranking Politician

The high-ranking politician was approached through one interview with one of the main actors in the second legislative processes to change the environmental normative.

The topics of this interview could be summarized in the following way: i) social, economic, political, and environmental context of Chile at the moment of environmental law deliberation – main facts and actors -; ii) main orientation and purpose of each law; iii) distinctive character of the Chilean law or what is the particularity of the society-nature relation in Chile; iv) international integration or how to describe the Chilean environmental route in the international context; v) relation between the expansion of extractive industries and environmental protection in Chile.

I approached this set of interviews contending ecological modernization in Chile was the basis for expansion of the extractive industries not its limitation. Even when industry process tends to "green production", the agglomerated effects over the local ecosystem increase and produce a re-emergence of the socio-ecological conflict, and not regulation.

iii) Academic Scholars

Due to the diversity of the academics in terms of professional background and type of research, the interviews required a major degree of flexibility. It is not possible to show a rigid set of question in this section, because inquiries were adapted to bring out the most relevant information from all interviewees' point of view. Nevertheless some relevant topics were: i) environmental perspective or from which perspective the society-nature relation is interpreted, e.g. ecological rationality, economic/environmental sustainability, environmental emblems, models of

production, thus between other relevant concepts; ii) new environmental institution and the impact of deployment, highlighting orientation, applicability, mechanisms of control, deviation from the norms; iii) socio-ecological conflicts, emphasizing the type of conflict, the localization, the scale, and the actors involved.

My arguments for this set of interviews proposes the type of socio-ecological problems observed and highlighted by the researchers, during the Chilean ecological modernization process, would be influenced by a general perspective to approach the study of the society-nature relationship.

iv) Ministry Policy Makers

The policy makers interviewed were all functionaries of ministries at the central level. In Chile, every ministry has a regional division and a central office located in the capital city. As with the academics, the range of questions was extensive because of the wide variability of roles and functions.

In general, the policy makers are capable of reporting differences regarding the modernization process that they were familiar with, be it first or second environmental law. Some have been public functionaries for more than thirty years and they lived the political process from which the first national environmental law emerged. On the contrary, there are other policy makers that have been in the public sector for only a few years, but are somewhat experts in the new environmental law of 2010 and they know in great detail the problems and shortcomings of the environmental institution.

In general the topics for these interviews were: i) the origins of some legal mechanisms created by environmental legislation, e.g. environmental impact assessment, appeal for protection, special law for intercultural conflict, land property, water rights, economic instruments, compliance incentives, etc.; ii) new environmental institution and the operative impacts, iii) socio-ecological conflicts, and iv) the tension between the modernization of the environmental institution and the regulation of socio-ecological conflicts.

The basic hypothesis proposes that the environmental institution is not a final state in

the regulation of the environmental crisis. At the same time that it helps to solve socio-ecological problems, ecological modernization creates new ones.

v) Civil Society NGO

The interview done, with the intention to approach members of the civil society, was applied to the directors of one of the most important environmental NGOs in Chile. The topics were organized mainly in order to report some of the changing patterns of relations between the civil society and environmental politics in the last 30 years. Specific questions were asked in order to approach i) how the civil society followed the legislation process that approved the environmental law 19.300/1994 and the law 20.417/2010.

My perspective in designing these interviews was to understand the emergence of socio-ecological conflict in three different moments and to highlight the particularities of each period: i) During the 1980s, socio-ecological conflicts were connected with extensive episodes of contamination provoked by extractive industries; ii) in the 1990s, as a result of the extractive industrial expansionism and the lack of control, the socio-ecological conflicts appear connected with the distribution of scarce natural resources; and iii) from the 2000s on, the socio-ecological conflict appears due to the social opposition to an uneven distribution of damages by energetic and extractive mega-projects.

vi) Local Authorities and Local Community

The local authorities have been approached in relation to the socio-ecological conflict in the Atacama Desert. They do not represent local governments, but grassroots organizations associated with the Atacameños and Aymara ethnic groups.

The hypothesis that gives forms to the interviews sustains that the socio-ecological conflicts between the native population and extractive industries is not for a total monopolization of resources – like water, land, energy or labor-. On the contrary, what we observe is a selective integration to benefits and damages in the local communities.

The local community interviews share the same hypothesis as the local authorities.

The main difference rely on the scope of the inquiry, because the local community was interviewed in order to grasp examples of socio-ecological conflicts presented in the area where the mining industry is located.

At the end of this methodological section it is important to highlight that the use of the notion socio-ecological conflicts intends to expand the scope of situations analyzed under the environmental crisis. Normally, the last concept has been artificially restricted to physical effects over ecosystem produced only by pollution. Expanding this notion appears as a theoretical as well as an empirical requirement to make better sense of the human consequences of the transformation in the relation between society and nature.

Environmental Law Critical Discourse Analysis

For the discourse analysis of the environmental laws, the work was conducted directly with the history of law recorded by the congress library of Chile. These documents - accessible by Internet - contain all the discussions and deliberations produced in processing every national law. Due to the length of these documents – more than one thousand five hundred pages each - a selection was required. Thus, the analysis was made over three sections,

i) The Presidential Speech

The first documents considered in the analysis were the presidential speeches that introduce the different laws into the parliamentarian deliberation. These speeches are especially analyzed to recognize prevalent spatio-temporalities in order to frame the environmental problems; ecological conflicts and environmental emblems (Hajer 1997).

ii) Parliamentarian Discussion

The parliamentarian discussion was addressed by analyzing the texts of the environment commission and economic commission. The ecological modernization perspective proposes that the environmental policy intends to reduce the conflict between environmental care and economic development. The discourse analysis of the deliberation in the abovementioned commissions would bring about clarity on the tension between an economic-commodification and conservation-protection

standpoint towards nature. And this, especially regarding: i) different representations of nature protection in each commission, and ii) how spatio-temporal structures are represented and take form, as well, in each commission.

iii) The Factual Law

The factual law was analyzed with the intention to shed light on the most important definitions and mechanism behind the spatio-temporal restructuration. The law was examined in its first formulation, the one proposed by the executive power, and the final endorsement, the result of the parliamentarian deliberation. In some cases, the stabilization of concrete spatio-temporal devices was only possible to describe by successive reformulation of the law.

7.6.-Empirical Research Objectives

From the objective presented at the beginning of the thesis (see chapter two), the empirical part is occupied with the following ones: firstly and from a general perspective, to describe ecological modernization in Chile as a paradigmatic case of spatio-temporal restructuration. Secondly, and as a way to achieve the abovementioned objective: i) to describe the Chilean context for the ecological modernization as a transformation in the economic, political, social, and environmental dimensions with special emphasis in the social struggle coextensive to every form of modernization. In that case, regarding the re-emergence of the socio-ecological conflicts; ii) to approach the analysis of the environmental law as discursive dispositive that restructures spatio-temporalities within the society-nature relationship. Thus, reorganizing the understanding as well as the practices at the individual collective level.

The thesis would focus the analysis of the socio-ecological conflict within the case of the mining industry, and the coextensive struggle with the local community in the Atacama Desert. Nevertheless, this situation is approached only in its capability to articulate a narrative about spatio-temporal restructuration. In other words, the analysis is not oriented toward a description of the extractive industries and the local communities opposed orientation for action, but to the analysis of the extractive industries expansion and the conflict triggered with the local communities. The core

of the empirical research shows spatio-temporal restructuration as a plausible perspective of analysis for modernity as a general phenomenon, and institutional modernization as particular forms of social change.

7.7.-Expected Results

The expected results of the empirical analysis seek to offer a coherent narrative of spatio-temporal restructuration provoked by ecological modernization in Chile. This process has been divided in two periods of analysis: the first, ruled by the Law Environmental Bases (1994-2009), and the second, ruled by the Law Environmental Ministry (2010 until today). Each period will be approached by a description of spatio-temporal restructuration from two perspectives: the environmental institution representation, in which discourse analysis offers the major source of information, and the socio-ecological conflict reported by social actors and tackled by a narrative analysis. The central argument proposes that each law organizes a particular spatio-temporality:

i) The Environmental Bases emphasize the spatio-temporality of ecosystems' regeneration as the last frontier for industrial production; while ii) The Environmental Ministry highlights the spatio-temporality of environmental management oriented to economic certainty.

By doing so, the two laws analyzed frame social action in specific spatio-temporality, which should be compatible with the central characteristics of both waves of modernization. The first wave of modernization shows major material expansionism of the extractive industries as a main condition. As principal element, the second wave of modernization portrays consolidation of environmental markets for the regulation of socio-ecological conflict.

From another perspective, on the same analysis and accounting for the entire period of the Chilean ecological modernization, the thesis advocates that the type of socio-ecological conflicts emerging shows, indeed, the conflict between opposed spatio-temporalities. In this sense, the actions deployed by different social groups have the capability to render a specific spatio-temporality. When these social groups interact,

their particular spatio-temporalities also do so, and because of that interaction, some tensions are constantly emerging and re-emerging in the core of the society-nature relationship.

Here, two forms of tension are the most relevant for the thesis: i) socio-ecological conflicts as dissonance between the spatio-temporal dimension in which the legal frameworks seeks to operate and the spatio-temporality wielded by the environmental protection groups, and iv) socio-ecological conflicts as the dissonance between long period and wide territories of the extractive industries production and the singular spatio-temporal character of the local place for inhabitants.

In summary, to construct a coherent and plausible periodization of the Chilean ecological modernization in terms of spatio-temporal structures, regimes and arrangements, and its further changes, is the main result of the empirical part.

Chapter Eight: Methodological Framework:
Environmental Narrative Analysis as a Method for Approaching Socio-Temporal Restructuration

Chapter Overview

Under the notion of socio-ecological narratives, this chapter integrates references to critical discourse analysis and qualitative interview analysis by proposing a framework to empirically approach the study of social discourses of ecological modernization. Discourse analysis has been deployed in the academic study of ecological modernization extensively, and at least in two areas here: i) the emergence of a public policy that intends to make the imperative of economic growth and environmental protection compatible, and ii) the way in which different environmental problems are rendered governable in the context of liberal government. Beside the evident similarities between both approaches in terms of their capability to observe the discursive organization of the society-nature relationship, some differences are relevant. The former appears connected to public policy action and centrally concerned with economic progress, while the latter emphasizes the national government and the regulation of the political dimension.

The first section of the chapter offers a brief and general approach to discourse analysis in social sciences. The second section accounts for the discursive approach to environmental issues with special concern paid to the notion of ecological modernization and a set of related concepts. The third section engages and discusses the capability of narrative study of to shed light on the conflictive relationship between ecological modernization and spatio-temporal restructuration. The fourth section advocates for the study of what could be called the shifting orientation of critical discourse analysis from institutional modernization to spatio-temporal restructuration.

The explanatory route proposed in this chapter reveals the main theoretical orientations used for conducting an empirical approach in the following three chapters.

8.1 The Study of Discourses; A General Perspective

The notion of discourse is used today in the social, political, cultural, as well as scientific spheres. Social phenomena are approached from a variety of research fields by analyzing its discursive construction. The term "discourse" was used for the first time in social sciences by the Russian American linguist Zellig S. Harris in 1952 in his article about language and advertising research (Harris 1952). One year before, he published the influential book "Methods in Structural Analysis" (Harris 1951). Earlier in the 1950s the author analyzed how text, as a discourse, delivers information through concrete language patterns, while offering a scheme of structural analysis of different textual elements, e.g. morphemes concerning their order and role in the total discourse. In the perspective of Cameron (2001), Harris posits the question for the way in which a sequence of sentences become a text, i.e. a relational condition between sentences that act collectively, forming a larger whole in opposition to a contingent group of unconnected pieces (Cameron 2001: 11). Nevertheless, and in the words of Deborah Cameron, the intention of Zellig S. Harris is to understand the function of language or how language works, and this would differ in the approach of social scientist to that of discourse. Such is concerned with discourses in their capability to inform social life, social relation and the allocation of meaning in social phenomena from a qualitative perspective (Cameron 2001: 11).

Almost a decade after, and under the influence of the "linguistic turn" (Rorty 1967), 1960s philosophical concern lay with an analysis of language and its structuring capability. Language, speech, and text ceased to be considered a reflection of material dimension or merely a medium for the analytical philosophy. In contrast, language was assumed as the starting point for a constructed social reality or in other words, as said with the famous sentence, "language constitutes reality" (de Saussure 1959[116]). The linguistic turn denotes a shift in orientation in social sciences and philosophy, for the former it implies a movement toward an extended use of discourse analysis, and the later claims a misunderstanding of the nature of language. The importance to analyze language begins with philosophy joined to the process of world appearing to

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[116] This intellectual position is very clear to what de Saussure call a naïve approach "Some people regard language, when reduced to its elements, as a naming-process only-a list of words, each corresponding to the thing that it names [...] This conception is open to criticism at several points. It assumes that ready-made ideas exist before wards" (de Saussure "On the Nature of Language" in Lane 1970)

consciousness. In social sciences the turn to language is connected with the intention to deepen the understanding of how language emerges, its meaning and role within the consolidation of social discourses.

Considering the dimension of power inside social and cultural discourses, the works of the French philosopher Michel Foucault (Foucault and Sheridan 1972) are representative of a milestone. Foucault focuses on the interconnection between language and culture in the double dimensions of discursive practices (Hynes 2006) and regimes of practices (Foucault 1991[117]). With these two concepts, the French philosopher delivers a remarkable theoretical perspective for social research. Nowadays, Foucault's perspective informs different orientations in governmental analysis, and especially relevant for this thesis, environmental politics. Of particular interest are the works of Maarten Hajer (1995, 1996) Angela Oels (2005, 2013), and Michael J. Shapiro (2005).

The idea of a structuring function of language was furthered by its critics in the works of postmodernists Jacques Lacan (2007) for psychological analysis, Jacques Derrida (1978) on the deconstruction method and Jean-François Lyotard (2011) on the collapse of meta-narratives. Considered post-structuralist, this group of French authors denied the possibility of an existing and extended image of reality that could be shared by the whole society. This implies a pre-given and unequivocal interpretation of reality is no longer possible, and no analysis could begin from such a premise. According to this post-structuralist standpoint, everything is a discourse and it involves very distinct practices of construction. A discourse is a developing structure, but this structure does not imply homogeneity nor grand-narratives of human destiny. Social reality appears as created by individuals from various perspectives and through discourse.

Other disciplines such as psychology, philosophy, anthropology, sociology, ethnology, historiography, theology and political science also operate under this term within their investigations (van Dijk 1983). The social science disciplines consider

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[117] Michel Foucault give a clear explanation of the concept in the following sentence: "To analyse "regimes of practices" means to analyse programs of conduct which have both prescriptive effects regarding what is to be done (effects of "jurisdiction"), and codifying effect regarding what is to be known (effects of "veridiction")" (Foucault 1991: 75)

several issues, such as gender discourse, racism discourse, media discourse, political discourse, and environmental discourse among others, with the aim to enlarge knowledge regarding constructed social phenomena (Alvesson and Karreman 2000; Ellingson 1995; Fairclough 1992; Gill 2009; van Dijk 2001).

The most general definition of a discourse presents it as i) a spoken act, ii) a written text, and iii) an extended social meaning. In every case, language is medium for the construction of social reality, referent for the emergence of social word, and at the same time provides representations of different objects, images and cognitive schemes. As one of the main researchers of discourse analysis Norman Fairclough says, "A discourse is a way of signifying a particular domain of social practice from a particular perspective" (Fairclough 1995: 14). In sociology, the term discourse is not only restricted to the definition of interpersonal dialogue in what could be named as speech event, but also as a social dialogue between social institutions and individuals, groups and organizations. By this dialogical condition social actors negotiate and struggle for common definitions of objects and concepts, which may be shared by others individuals in the future. In other words, the discourse marks out certain systems of meaning and fields of knowledge that shape the world in different categories and action modes. Each representation of a social reality struggles to become the preponderant in the construction of meaning, and is why social discourses are always considered a dynamic process (Fairclough 1993; Luke 1995).

8.2.-Critical Discourse Analysis in Environmental Issues and Ecological Modernization

Starting from the notion of discourses as "an ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices" (Hajer and Versteeg 2005: 175), it is possible to highlight a group of orientations for the social research approach: i) Discourses are not statics but change along time and also space; ii) Discourses are not homogeneous, on the contrary, they allow certain levels of heterogeneity inside them; and iii) Discourses require interpretation, which is the factual origin of the social struggle and negotiation around them stabilization and change. In short, social discourses, and especially for the case of discourses regarding

the society-nature relation, are to a great extent the result of social action, imagination and representation.

The work of Hajer "The Politics of Environmental Discourses: Ecological Modernization and the Policy Process" is an entrance to the heterogonous character of social discourses of environment (Hajer 1995). The Dutch sociologist proposes that some discourses become dominant if to a large degree they have the capability to determine what can be said within a field. In the environmental sphere this condition is especially prevalent because a direct, *face to face* experience is not always possible within ecological problems and conflict. The notion of "discursive emblems" reflects the selective condition of the ecological crisis performance in society. The ecological crisis must be communicated to the extended public opinion by policy makers, because of that reason, environmental problematics appear as prevalent in certain periods of time. In a similar fashion, environmental discursive emblems are responsible for excluding other possibilities to render the ecological crisis in particular spatio-temporal frameworks.

"[…] acid rain is a fine example of what are defined in Chapter 1 as the emblems of environmental discourse. This refers to issues that stand out in a particular period and dominate public and political attention. These issues can be shown to function as a 'metaphor' for the environmental problematic at large. That is to say, people understand the bigger problem of the ecological crisis through the example of certain emblems." (Hajer 1995: 5)

Following the definition of Hajer, the notion of emblem is not restricted to the discursive dimension because these are the "metaphors" for social action toward environmental problems as a whole. In other words, the emblems are the bridge between discourses about the environment problems and the policies created to manage them. In a similar sense, these emblems are likely to emphasize the double condition of the notion of "regimes of practices" in the work of Foucault (1991). For the French social scientist and philosopher, a regime of practices should be understood as the imposed rules as well as the given reasons. In short, a comprehensive approach to the social research on discourses must explain how the discursive realities translate influences to the material world.

A very important theoretical step in the conceptualizations of both Hajer and Foucault is to criticize the non-problematic character of social practice and representation. Emblems are a form of portraying socially the ecological crisis. During every given time period it is possible to highlight one prevalent ecological problematic, but this condition proves its contingent condition and not its necessity. For Foucault, this situation is even more explicit, his theoretical proposal clearly seeks to divest the social practices of two incorrect beliefs: i) the evident condition of the ways-to-do, and ii) the legitimated condition of the discourse in which the practice acquires its meaning. If Foucault's question in "Discipline and Punish: The Birth of the Prison" (Foucault 1977[1975]) changes from what is punishment to how punishment is socially exerted, then a similar shift could be made within environmental issues. This means, moving from the question what is environmental care to the explicit way in which environmental protection is exercised, discursively and materially. For example, the number of different forms for approaching sustainability currently applied around the world; some are much more environmentally caring than others, and in the same way, some are more economically profitable than others.

The transformation of discourses and practices of environmental care into real ecosystems and to protection of local communities should be a matter of sociological analysis undertaken from a critical perspective. In this social scenario the notion of ecological modernization is crucial because it allows the description of the transformation of the society-nature relationship across time and space in at least three dimension: i) the discourses about the environment and the performative character of the ecological crisis, ii) the social practices deployed to obtain certain degrees of environmental protection in the frame of a product-oriented society, and iii) the public policy's answer to the ecological crisis performed by social discourses and practices.

In the three abovementioned dimensions, ecological modernization is the socio-political response to the challenges suggested by ecological crisis. Derived from the last paragraph, this process is undertaken at the national level but runs across time and space, meaning that regional and international influences and the orientations of multinational institutions play a central role. No country in the world could not claim

to take measures to counteract e.g. global warming as the current environmental emblem. A different question is to ask whether these measures are really decreasing production of greenhouse gases and their negative effects. Furthermore, the question still remains open to improvement of natural ecosystems and the quality of life of populations at the local level as result of the policy measures deployed to counteract global warming.

From the perspective defended in this thesis, inside the concept of ecological modernization, it is possible to distinguish between a normative and a factual character (Campos-Medina 2012: 10[118]). Ecological modernization, especially in capitalist and democratic western societies, congregates the social and political intention to move the society-nature relation to a more protectionist standpoint. This could be seen as the normative dimension of the concept. It reflects strongly a social ideal but does not account for the current state of affairs within the socio-ecological conflict. The factual dimension of ecological modernization fills this gap and emphasizes the real consequences at the local level, ecosystems and population, and of every single measure of sustainability.

If is possible to observe differences between the normative and factual dimensions of ecological modernization then the question of its rationality emerges. Whenever we observe consistent differences between the discursive justification and practical realization of extended social goals, the discursive analysis opens the door to study the rationality negotiated between individual action and social life. The rationality or rationalities behind ecological modernization should be the object of inquiry, not a given reality. For some authors, ecological modernization as discourse allows the harmonization of the inherent tensions among environmental protection and economic growth (Hajer 1995, 1996). The policies oriented by this perspective are colonized by economic rationality, i.e. that they are never fully oriented for the ecosystem's protection. On the other hand, the perspective of some Latin American authors as Enrique Leff proposes the concept of ecological rationality as a deconstruction of the modern rationality. The following quote summarizes well his perspective.

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[118] Paper presented to the conference Transdisciplinary Intercultural Ecological Research for Sustainability TIERS Jena 8-10 of June 2012

"An alternative environmental rationality for sustainability (Leff, 2004) is configured in the field of political ecology by rooting deconstructive thinking in the ecological and cultural territories […] Deconstructing theory and decolonizing knowledge in the perspective of political ecology implies politicizing the concepts of diversity, difference and otherness to construct sustainability rooted in specific cultural territories. This requires establishing and enforcing rights for cultural diversity, for the construction of territories of difference and for the deployment of a political ethics of otherness." (Leff 2012: 8)

Another Latin American author concerned with the problems of the modern rationality applied by the strategies of development in the third word is Enrique Escobar (1995). He strongly criticizes the international policies of development, saying that beside its obvious failures shown explicitly by the negative consequences of its implementation, no counter action was applied. The total failure of the modern and economic rationality was not proof enough to challenge established knowledge.

"The fact that most people's conditions not only did not improve but deteriorated with the passing of time did not seem to bother most experts. Reality, in sum, had been colonized by the development discourse, and those who were dissatisfied with this state of affairs had to struggle for bits and pieces of freedom within it, in the hope that in the process a different reality could be constructed." (Escobar 1995: 5)

In summary, ecological modernization seems to carry, even subtly, the modern rationality and especially its way of economic assessment. In that context, social narratives of ecological modernization appears as colonized by the same style that the economic rationality have toward time and space. Environmental affairs are no longer considered under the fragility of ecosystems and populations. One could criticize a particular practice of economic sustainability, suggest a different approach at the local level, but the fact that the modern rationality in its formal and speculative forms are the way to coordinate action in the environmental sphere, can not be doubted[119].

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[119] From the economic point of view, the environmental sphere is moving from measures of command and control to the incorporation of market mechanism to regulate environmental problems. Under this perspective the ecological crisis is not a question of the society-nature relation but a deficit in the rational mechanism implemented so far to regulate environmental problem. See for example Kirchgässner and Schneider (2001) "On the Political Economy of Environmental Policy"

Ecological modernization and its sustainable measures achieve a status of a social ideal and a total certitude for the population. To coordinate social action in the environmental sphere but under the global economical integration requires coordinating a big amount of strategies, and perhaps the most relevant is the restructuration of time and space as novel frameworks for action.

8.3- Spatio-Temporal Restructuration Approached by Social Narratives

The study of social narratives is, in this thesis, considered capable to shed light on the conflictive consequences produced by ecological modernization at (at least) two levels: i) the extended official discourse regarding environmental improvement and the opposition to this idea of enhancement expressed via the re-emergence of socio-ecological conflict at the local level, and ii) ecological modernization as an all embracing process at the global scale and spatio-temporal restructuration where the local level regains relevance.

On the one hand, the re-emergence of socio-ecological conflict in recent years in Chile evidences a rendering of the ecological crisis in opposition to the official or governmental discourse (Campos-Medina and Larenas 2012). Reconstructing the positions of different actors in the field of environmental politics, and analyzing these narratives, allows for different interpretations of the ecological modernization to be emphasized. To observe the negotiation of meaning between actors and the social context in which their experience is framed (Bernasconi 2011a) gains special interest.

A narrative approach to socio-ecological conflict opens to social inquiry the society-nature relationship in its particular historical context. If we agree with the definition proposed by many scholars that: *what is narrated* is inseparable from the *condition narration* and the *purpose that induces the narration* (Bernasconi 2011b: 12[120]), then three elements of inquiry become relevant. First, individuals as well as groups have the capability to negotiate meaning, which implies the possibility to modify stories. Second, the narrative approach allows holistic recomposition of the social field under dispute rather than fragmenting people as well as social experience. Third, the social

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[120] The original Spanish text says: "Dicho de otra forma, comprendí que lo que se narra es inseparable de las condiciones de producción de la narración así como de los propósitos que la inducen."

context plays an active role in the construction of the social meaning in which individuals and groups negotiate their experience.

The narrative approach is not restricted; it is not a research method meant to verify the accurateness of the story or social facts reported by individuals, groups or institutions. The narrative approach is a form of inquiry about narrative practice and the stories that people, groups and institutions compose inside and about social life. Narration is the form in which human agencies attribute meaning, and it is as well one of the most basic forms of human communication (Bernasconi 2011b).

For the purpose of the empirical analysis, narration regarding the process of ecological modernization permits the research of action and representation made by social actors around different possible meanings and orientations of environmental politics. The society-nature relationship organized under the current and extended target of environmental protection, from this perspective, is a heterogeneous set of meanings. These meaning are carried by the social actors within their narratives and disclosed by the narrative analysis.

On the other hand, narration is the only way to approach the social structuration of time. In contrast to social action, storytelling shows the integrative character of narration by performing past, present and future. The strong roots of stories in the temporal sequence of event and in the location of different episodes are at the basis of the study of spatio-temporal structuration by the narrative approach. Following Bernasconi (2011b), through narration it is possible to apprehend social action and culture, and in this sense, narration is an ontological and epistemological device.

Even when the focus of the Chilean sociologist is personal narration constructed along life experience, pervasive social phenomena might also be understood under the light of her approach. Social narration is also articulated in a trajectory that highlights a story and a plot. Social narratives of institutional transformation compose a sort of multi-level storyline in which every story expressed by individual, social groups and organization are constructed over experience, not outside the historical conditions that mediate the construction of meaning.

What is narrated and how, represent two of the three analytical focuses in the work of Riessman (2008), which are especially relevant for the empirical analysis offered in the following. What is narrated, bring the social discourses to the spatio-temporal sequences of fact reported by actors. How something is narrated, shifts the focus to the way in which a story has been told and the motivations of the actors.

Narrative analysis of the social actors' position in the environmental field of ecological modernization seeks to overcome the discursive dimension and to access the material transformations operating within the society-nature relationship. Ecological modernization rendered only as a final stage of institutional improvement, obscures the controversial reorganization of actions and roles running in the environmental scene. From that point, and deduced from the spatio-temporal anchored of social narratives, is possible to propose to further the research on the different organizations of time and space among social groups. This is a good perspective to account for re-emergence of the socio-ecological conflict. A spatio-temporal restructuration, conducted from the discursive and narrative approach, asks which interpretation, action, and dispositives are produced by specific spatio-temporal regimes, rather than to take them as stable before hand.

8.4- Ecological Modernization as an Engine for Spatio-Temporal Restructuration

As discussed in the sections above, this chapter challenges the official representation of ecological modernization as simple institutional improvement, and proposes instead a multi-level set of social meanings constructed around transformation in the national environmental institution. Furthermore, it suggests that the modernization process has contributed to the increasing depoliticization of the society-nature relationship over the last 20 years (Campos-Medina and Larenas 2012)[121]. This interpretation is supported by the discursive analysis presented in the following chapters, showing an ecological debate based exclusively on notions of the sustainable extraction of natural resources and sustainable pollution management

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[121] Regard the ecological modernization in Chile as depoliticization because it implies a "constant decline in the public and social character of the ecological debate. The new environmental institution represents modern procedures' access to the ecological management, as well as the exclusion, of previous forms of socio-ecological conflict regulation." (Campos-Medina and Larenas 2012: 6). Translation by the author.

control is insufficient to deal with the negative and pervasive consequences of the extractive industries on which the Chilean economy is based. The argument implies that it is possible to improve sustainable production and concurrently reinforce the socio-ecological conflict at the local level whenever the extractive industries are extended regionally. This is the basis for the heterogeneous character and the diversity of meanings attributed to the ecological modernization in social discourses and narratives.

Mol and Jänicke (2009) argue that, originally, ecological modernization began as political projects in Germany and the Netherlands. The concept was approached as the "social scientific interpretation of environmental reform processes at multiple scales in the contemporary world" (Mol et al. 2009: 4), especially in projects where caring for the environment does not restrict economic development but actually produces benefit. On the other hand, certain groups of scholars use the notion of ecological modernization to criticize new environmental public policy orientation, which was internationally implemented in the early 1980s and is still applied today. The main characteristic of the policy oriented by ecological modernization is the extended belief that it is possible to maintain the economic system and simultaneously comply with environmental goals. In other words, satisfying the need for growth and protecting and improving environmental conditions are feasible[122] when new technologies and market mechanisms are incorporated into the sustainability development framework.

The critical perspective was formed because no international environmental protection goals have been fully realized in the last two decades. For example, global warming has worsened (IPCC 2007, IPCC 2013)[123,] the territorial roles and the inequalities between the northern and southern regions have been strengthened (Roberts and Parks 2007; Gonzales et al. 2007), and socio-ecological conflicts seem to increases in many countries[124.]

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[122] In some ways, all the critical literature on ecological modernization recognizes this characteristic.

[123] IPCC report on 2013 says "Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850 (see Figure SPM.1). In the Northern Hemisphere, 1983–2012 was *likely* the warmest 30-year period of the last 1400 years (medium confidence)" (IPCC SPM 2013: 3).

[124] In respect of Chile, see Campos-Medina, F. and Campos-Medina, L. (2012) paper presented to the Berlin Conference on the Human Dimensions of Global Environmental Change Berlin, 5-6 October 2012

Both interpretations of environmental institutional modernization are based on social narratives, which sustain certain social institutions need be changed in order to tackle the environmental crisis. The main difference lies in the reasons given by various social actors for the transformation. According to its advocates, modernization should improve every social life sphere in order to ensure a more rational use of resources. Modernization should help environmental institutions incorporate economic rationality in order to coordinate decisions i.e. they should become more efficient and effective, and the social costs incurred by meeting their objectives should be minimized[125].

In contrast, for detractors, modernization processes have always had pros and cons (Van der Loo and Reijen 1992; Rosa and Scheuerman 2009); the ecological institution is no exception. The pursuit of rational use of resources may lead to liberal economic rationality's colonization of the ecological sphere, confusing the means and ends of the process. In this sense, social, economic, political, and environmental institutions are changing in order to face the ecological crisis, but with the implicit intention to protect the economic imperative of growth, not to defend nature, the local ecosystem, communities, and biodiversity. From this critical standpoint, it is possible to state that the subordination of nature during the last three or four decades has been reinforced by the ecological modernization process in Latin America (Altieri and Rojas 1999; Guimarães 1999; Gudynas 1999).

The argument for approaching the empirical research is based on a critical perspective to modernization. The main question is whether, given the many examples of devastating human consequence of environmental change around the world, it is possible to merely conceptualize institutional modernization as social improvement. At the discursive level this colonization of reality has been extremely pervasive and very impervious to criticism. Ecological modernization implies that one interpretation of the ecological crisis and the needed action for its control is dominant. Nevertheless,

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[125] Ecological modernization gives rise to a particular form of rationality, which some authors have subsumed under the economic rationality concept, while others have considered it independent of other social spheres. Nevertheless, the particular characteristics of this "ecologic rationality" should be the object of empirical research. Describing the integrative character of all the material and symbolic interactions between society and nature, Enrique Leff (1986) argued that: Every society creates its own environmental rationality.

it does not exclude other approaches, even when they are considered as alternative or just subordinated. For example, at the global level and in enlarged temporalities, ecological modernization supports the construction of megaprojects related to raw material extraction, energy production, and waste deposits –especially in developing countries – where green technologies and rational management are expected to be implemented. These types of enterprises are at the basis of a spatio-temporal restructuration at the macro scale because they represent a specific form of global integration in these regions.

Here ecological modernization is understood as the modernization process that all governments promote and is applied to environmental institutions at the national and State level. This conceptualization challenges the idea that ecological modernization is a process that describes the situation in developed countries with a market economy and a welfare State; that is, especially the primary OECD countries. Ecological modernization has been the socio-political answer to national-level environmental crisis since the 1970s, regardless of the country's political, economic, or social situations. We can thus assume that, even if the industrialized countries were the forerunners, every country in the world has currently undergone a transformation of its environmental legal frameworks and institutions in order to address ecological challenges. This shows another side to spatio-temporal restructuration as international policies regarding green production, decontamination processes, and the international combatting of global warming, are narratives constructed in the macro-scale.

In the empirical analysis, an underlying assumption proposes that every country represents a different form of modernization that responds to a different international integration imperative, whether ecological and/or productive[126]. The international level plays a fundamental role as multinational agencies influence the management of ecological policy, help shape the environmental crisis narrative, and facilitate the

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[126] The arguments presented here are based on sociological critique of the theories of modernity, which regard the modernization in Central Europe and North America as an unavoidable track that every other society has to follow. The modernization process can differ from society to society because the core of this sociological explanation is not the result, or the last stage, of modernization tendencies, but, conversely, the requirements that every society confronts in a growing and unavoidable modern context (see Touraine and Bixio, 2000). In another variant, this argument could be based on the idea of "universalistic integration" presented by Chernilo and Mascareño (2005). Here, environmental international integration is compelled by universalism and particularism in a normative as well as functional context.

setting of priorities and the defining of the procedure. This is the spatio-temporal restructuration operating at the macro-level.

On the other hand, ecological modernization is also the transformation of the society-nature relationship at the national level, framed by the global context expressed above. At the national level, this thesis approach regresses from the conceptualization of ecological modernization and sustainable development as the two main ways in which environmental institutional transformation might occur. Even if the two orientations for action – ecological modernization and sustainable development – are not conflated (Langhelle 2000), it is theoretically and empirically impossible to separate them as two distinct tracks. The notion of sustainability is highly embedded in modernization rhetoric, and the movement toward sustainable forms of production is therefore a central part of the modernization process in all analyzed international cases. The observation of sustainable measures at the national and local level offer a good entrance to study the spatio-temporal restructuration provoked by the ecological modernization in the micro-scale. Individual, groups and social actions as well as discourses show a form of society-nature relationship, which is tensioned by the different narratives created around the idea of environmental protection.

Summarizing, ecological modernization appears as an engine for spatio-temporal restructuration in the macro as well as micro scale. At least five characteristics of ecological modernization are relevant for the study of the changing structures of time and space: i) Ecological modernization promotes a particular definition of time and space for the implementation of policy, especially by defining nature and the limits of ecosystems when applying control and/or compensation mechanism; ii) A particular spatio-temporality appear as the most relevant for the deployment of the ecological modernization, which has been called in previous chapters, the long temporalities and wide geographies of the macro-scale; iii) Specific form of spatio-temporal framing between environmental problems and policy measures appears as discursive dispositive and they are accessible by the study of social narratives; iv) Different spatio-temporalities that are framing the action and the representation of the society-nature relationship among social groups appears as struggling for ruling the environmental sphere; iv) Socio-ecological conflict re-emerging at the national level

could be conceptualized as a spatio-temporal coincidence of different orientation for action.

8.5 Chapter Eight Summary; Spatio-Temporal Restructuration in Environmental Issues

Commonly, the type discourse analysis applied to environmental issues has been restricted to approach the government action with special emphasis in what has been rendering the ecological crisis and framing the political measures implemented. Thus specially using the notion of governmentality developed by Michel Foucault. This chapter provided a general overview of the orientation that discourse as well as narrative analysis takes in the thesis with the intention to enlarge its focus to the study of the spatio-temporal restructuration provoked by the ecological modernization.

The central question is why to study the spatio-temporal restructuration in the environmental sphere by the analysis of social discourses and narratives. As an answer, it is possible to state that in a very basic level every social story is structured by time and space. That means that the narrative as well as discursive practice require to been rooted in a particular time and space frameworks. What is being narrated should be constructed in a sequence of facts and interpretation that implies past, present, future, and also a specific location or relation between places. In short this is the spatio-temporal structuration of narratives and discourses.

On the other hand, the social narrative and discourses have the capability to structure time and space. As was mentioned in the section above this occurs when stories, official and even unofficial, make one of its topics the spatial and temporal dimension. Five mechanism where identify in this regards, which are connected with the spatio-temporal restructuration deployed by the ecological modernization: i) a novel organization of time and space carrying out by the redefinition of nature, ecosystem, and environmental impacts, ii) a predominant spatio-temporality to frame environmental issues, iii) discursive dispositives to correlate ecological problems and possible solutions, iv) different spatio-temporal frameworks to organize the representation of the society-nature relationship among different social groups, and v)

the spatio-temporal coincidence between opposed orientation for action toward nature, among different social groups.

Social discourses and narratives have the capability to re-structure time and space and this will be the focus of the chapters ten and eleven advocated first, to the actors perspective of the ecological modernization, and second to the discourse analysis of the Chilean environmental law of 1994 and 2010.

Chapter Nine: Empirical Research I
Chilean Ecological Modernization: A Critical Perspective on the Historic Narrative

Chapter Overview

The ecological modernization process in Chile shows a temporal coincidence with two other parallel processes: i) the restoration of the democratic regime and ii) major expansion of extractive industries. The present chapter outlines the main conditions of ecological modernization in the economic, political, social and environmental dimensions, and it argues for an integrative perspective of analysis.

The analysis offers a contextualization in two parts. The first section addresses the description of the economic, political and social contexts of ecological modernization. The increasing presence of the extractive industries in the national economy is portrayed as the central condition in the economic dimension. The political dimension emphasizes the temporal congruence between the democratic return and the intensification of the commodification of nature as an outcome of over-confidence in parliamentary deliberation. The social dimension illustrates excessive privatization of public policy as the responsible for the re-emergence of social movement in recent years.

The second section will focus on analysis of the re-emergence of social movement in the environmental sphere, and thus proposing ecological modernization in Chile as a process of de-politicization. The main argument states that the de-politicization process has both active and passive dimensions, and these are articulated in the social representations made of ecological problems. The passive dimension defines the environmental concerns solely as pollution management and the rational exploitation of natural resources. The active dimension excludes alternative representations related to human and ecological consequences resulting from energy production by mega enterprises and raw material extraction at the local level.

The results of the discursive material show how since 1994 the official -or governmental- discourse has been oriented to reduce social deliberation of environmental problems and following this, how in recent years mass media coverage has rendered illegitimate i) the intention to limit big copper mining in the Atacama Desert, ii) the social opposition to mega hydroelectric plants in the Chilean Patagonia and, iii) the land conflict produced chiefly by the forestry industry

9.1.- Characterizing the Socio-Historical Context for the Transformation of Chilean Environmental Law

9.1.1.- A General Approach to Chilean Environmental Legal Transformation

In the following chapter the historical context that frames the transformation of the Chilean environmental law will be approached. This description links different sources of information about the economic, political, social and environmental dimensions. Secondary data, official government texts and international reports and documents, are used together with primary information collected by interviews with key-actors. The intention is to portray a comprehensive picture of the context in which the Chilean route to ecological modernization took place[127]. Following this, the notion of socio-ecological conflict is addressed with the aim of understanding the tensions among different social actors as the constitutive element of the environmental dimension. This tension is inherent to every process of ecological modernization.

The aforementioned perspective of analysis means to highlight how different orientations arise inside each dimension considered. In the economic sphere, the goal is to describe how the extractive industries extend a contribution to the general national economic performance, becoming by far the most relevant economic activity. In the political arena, the intention is to illustrate how during the Chilean *democratic transition*[128,] and at the very core of governmental deliberation, privatization of the public policy provision has been reinforced in different areas but also in the environmental politic. In the social realm, the objective is to observe how social movement re-emerges in opposition to the segregating effects resulting from public policy at the end of the first decade of the 2000s, and how the environmental scene has become a very relevant space for social struggle.

From a general perspective the Chilean form of society-nature relationship during the ecological modernization process could be summarized as the maintenance and intensification of what I call an *orientation toward extractive activities.* This has

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[127] The notion of *ecological modernization route* is used by Alejandro Pelfini to approach the case of German climate-politic as collective learning process and institutional formation, see (Pelfini 2005)

[128] For a complete analysis of the Chilean democratic transition in the context of the socialist government, the coup d'état, and the dictatorship regime, and the first democratic government after the military regime, see Boeninger 1997.

meant a soaring rate of environmental damage, ecosystem weakening, extensive resources exploitation and monopolization of natural resources. This process has been barely connected with the social redistribution of economic profit among populations and contrarily linked to the uneven social-allocation of environmental hazards. This condition of the Chilean ecological modernization process could not be explained without a focus on the political dimension, which has sought, simultaneously and inconsistently, for the intensification of production in a context of economic deregulation and a very limited intersectoriality coordination of environmental care.

The Chilean intention to achieve the condition of a *developed country* has played a fundamental role in the stabilization of a consensual form of society-nature relationship[129]. The exacerbation of economic advantages together with the remarkable and peaceful reestablishment of the democratic system is presented as the perfect scenario for further development. Inside this rhetoric no other country in Latin America presents such favorable conditions to leave behind under development[130].

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[129] Here, the thesis argument it is not only describing a sort of social imaginary extended in the population. On the contrary, proposes a particular social-political assembly that mobilizes specific actions in the public sphere. As an example, we could observe the incorporation of Chile, as the first country in South America to the OCDE in 2010. At that moment the discourse of the former (and future) president of Chile Michelle Bachelet is very explicit to states how Chile, because of his improvement in the political, economic and social dimension is honoured with the integration to the OECD and how this means, a novel public policy tuned with the path followed by the most advanced economies in the world. "[...] I say legitimate and genuine joy, which is add to a feeling of satisfaction and pride, [...] is both a great recognition of all that we have made as a country in these years of freedom and democracy, together all Chileans. What happened during these 20 years is historic. Chile moves over underdevelopment and walks steadily to become a developed nation in a few years. But the OECD membership is much more than an acknowledgment. It is, above all things, [...] the beginning of a new path full of future that opens up vast new opportunities to move quickly toward that desired development". Original text in Spanish: "[…]digo legítima y genuina alegría, que se suma a un sentimiento de satisfacción y de orgullo, […], es al mismo tiempo un gran reconocimiento a todo lo que hemos avanzado como país en estos años de libertad y democracia entre todos los chilenos. Lo que ha ocurrido durante estos 20 años es histórico. Chile deja atrás el subdesarrollo y se encamina a paso firme para convertirse en una nación desarrollada en unos años más. Pero la incorporación a la OCDE es mucho más que un reconocimiento. Es, por sobre todas las cosas, […] el inicio de un nuevo camino cargado de futuro, que nos abre nuevas y grandes oportunidades para avanzar con mayor rapidez hacia ese anhelado desarrollo." Available in Internet http://prensa.politicaspublicas.net/index.php/economia/2010/01/11/discurso-de-bachelet-ante-ingreso-de-chile-a-la-ocde. Translation by the author.

[130] In a similar way, Gonzalo de la Masa (2005: 11) states: "Having spent more than 30 years since the military coup of 1973 and the first five years of the XXI century, Chile can boast more than two decades of almost uninterrupted economic growth and fifteen years of peaceful transition from dictatorship to democracy. Both trends differentiate the country in a positive sense with respect to many of its neighbours in Latin America, and are somehow an unexpected balance of democratic struggle waged in the 80s." Original text in Spanish: "Habiendo transcurrido más de 30 años desde el Golpe militar de 1973 y el primer quinquenio del siglo XXI, Chile puede mostrar más de dos décadas de crecimiento económico prácticamente ininterrumpido y quince años de transición pacífica de la dictadura a la democracia. Ambas tendencias diferencian al país en un sentido positivo con respecto a

This consensus has been promoted by the political and economic elites while seeking to maintain stable patterns of economic growth before and after the democratic transition.

Figure 7 shows the accelerated and sustained growth of Chile's GDP between 1986 and 2010. This exponential growth is largely explained by the development of extractive industries, and fundamentally, copper mining. Within this process it is possible to identify at least five orientations that form the basis of the extractive industries' success and economic growth: i) a non-contested social relation with nature based in extractive processes as the center of Chilean revenue, ii) connected with the last, a low tax burden for raw material extraction, iii) an economic orientation toward the privatization of public policies, particularly, housing, education, health, social security system and natural resources extraction, iv) Conjointly, the privatization of water rights as well as the concentration of land tenure in vast non-urban regions of the country in the 1980s, and v) An energy policy seeking national autonomy with high regional dependence, vi) The setting of the national territory for international capital investments (Campos-Medina 2012).
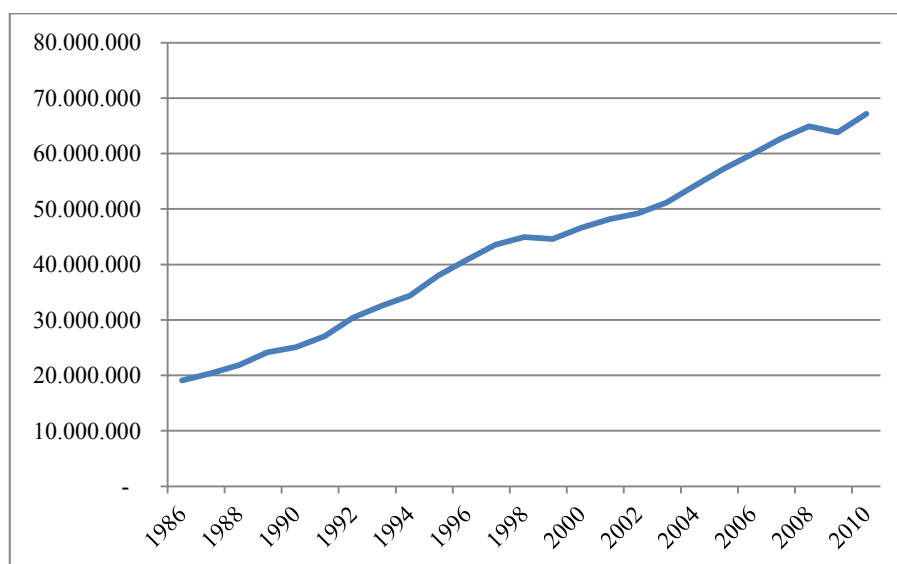
Figure 7. Graphic evolution of Chilean GDP
Self-elaboration with data from the Chilean Central Bank
GDP at constant price with money valued at 2003 in millions of Chilean pesos

The political system has been active in the stabilization of a particular form of

muchos de sus vecinos en América Latina, y resultan en cierto modo inesperados como balance de la lucha democrática llevada a cabo en los años 80s." Translation by the author.

society-nature relationship since the beginning of the 1990s and during the entire ecological modernization process. In this sense, at least four interconnected discursive dispositives are deployed by these politics: i) a central representation of ecological problems as environmental pollution, especially urban air contamination, ii) a productive orientation which does not discuss the extractive base of the Chilean economy but seeks to make it more efficient, iii) a way to face the ecological problem based on use of time-space regenerative capabilities of ecosystems as the sole limit to the new economic rationality, and iv) the increasing incorporation of market mechanisms to regulate socio-ecological conflict. This argument makes a foundation for the empirical analysis of Chilean ecological modernization in this chapter, but does so especially for the two subsequent analyses: actors' discourses and actions, and environmental law discourse. Due to limitations, international institutional and regulatory coordination has not been tackled here too deeply, although it is an important dimension. Ecological modernization must consider a national and international dimension, in the context of integrated and globalized environmental politics and economic articulation.

The integration of these four discursive dispositives is far from being irrelevant for a society where the economy is extensively articulated in the spatio-temporality of extractive process[131], –exploitation or plantation- in vast non-urbanized areas of territory. Table 5, shows the regional GDP and the population by region. Beside the capital region of Santiago, the Antofagasta region shows, interestingly, the production of 10.50% of the national GDP by 3.41% of the national population. This region is the traditional location of large-scale copper mines.

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[131] Extractive industries have become the center of attention of many scholars trying to explain why resource-rich countries, against the common expectation, may not achieve good levels of development. When connected with the national institutional dimension, the focus has been made in the so-called *"the paradox of plenty"* proposed by Terry Lynn Karl (1997) showing how the prosperity associated to oil booms for oil-producer countries as Venezuela, Iran, Nigeria, Algeria and Indonesia, at the end of the 70s, leads to State weakening instead of institutional improvement. Going further in this line of analysis, Jonathan Isham extended the threat of socio-economic division intensification and institutional capacity deterioration to countries dependent *on point source natural resources* (oil and mining) as well as plantation corps (Isham et al 2005). When the focus is made in corporate social responsibility, then appears the economic-cost of social conflict between extractive industries and local communities, in this line see the work of Davis and Franks (2011) for the Chilean mining case.

Regions of Chile, organized from north to south	Regional GDP Amount 2011	Regional GDP % 2011	Regional Population 2011 estimation	% Regional Population 2011 estimation
XV De Arica y Parinacota	595709	0.66	18319	0.11
I De Tarapacá	2887892	3.18	321726	1.88
II De Antofagasta	9526445	10.50	581701	3.41
III De Atacama	2465955	2.72	282575	1.65
IV De Coquimbo	3142023	3.46	728934	4.27
V De Valparaíso	7768239	8.57	1777470	10.40
RMS Región Metropolitana de Santiago	45739672	50.43	6945593	40.66
VI Del Libertador General Bernardo O'Higgins	4311899	4.75	891763	5.22
VII Del Maule	3440447	3.79	1015763	5.95
VIII Del Biobío	8075422	8.90	2048993	11.99
IX De La Araucanía	2175381	2.40	978402	5.73
XIV De Los Ríos	1173628	1.29	380707	2.23
X De Los Lagos	2424039	2.67	846614	4.96
XI Aysén del General Carlos Ibáñez del Campo	446965	0.49	105865	0.62
XII De Magallanes y de la Antártica Chilena	811.82	0.00	159154	0.93
	90690926.82	103.84	17083579	100.00

Table 5. Regional GDP and regional population for Chile 2011
Self-elaboration with data from the Chilean Central Bank, Statistic and National Institute of Statistics.
Money valued at 2010 and population estimates based on National Census data of 1982, 1992 and 2002

From a historical perspective, during the late 1970s and beginning of the 1980s, the Chilean political discourse, for the first time, focused on the notion of *sustainability* as a reaction to the UN Conference on the Human Environment (1972)[132]. In light of the outcomes, it is very plausible to argue that the concept of *sustainable development was translated* in the national reality as continuing an extractive orientation of the economic system, and by no means its restriction. As a consequence, the notion of *sustainability* has been rendered in Chile as a particular representation of nature as *source of raw material* in a path of economic development centrally concerned with mining and forestry activity, agriculture and fishing. The following quote by Altieri and Rojas (1999) expresses clearly that-Chilean economic success is based on a path of environmental destruction. If both outcomes are analyzed together -economic and environmental- Chile is not any kind of model of development as presented

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[132] Following Altieri and Rojas (1999) the environmental question appears in Chile as a reaction of the Stockholm Conference, and its principal vehicle was the ECLAC's discussion about dependency theory, underdevelopment and "styles of development and environment". To understand the last concept see Sunkel (1981), to get an account of the concept and its uses almost 30 years after, see Gligo (2006) and Pinto (2008).

internationally by the government or the international agencies.

"As the liberalization process continues, the celebrated Chilean economic growth is presented as the perfect model to be followed by other countries. But is the Chilean case really a success? If success is to be measured by the effects on the environment, then Chile is hardly a success." (Altieri and Rojas 1999: 128)[133]

Unfortunately from an environmental-conservationist standpoint the notion of sustainable development never addresses the necessity to redirect economy activity to other forms of production and consumption, those more concerned with the effects over territory and population. Instead, the ecological dilemma has been solved discursively by proposing to exploit natural resources in *a rational way*, and therefore avoiding different kinds of externalities in the short run, especially pollution. It has been stated "*in the short run*" because in the opinion of many scholars and politicians, the low Chilean tax burden that exists today for extractive activities shows a stumpy concern for any future conservation of resources in the long run. Hence, the capability of the economy to adapt to e.g. the scarcity of copper as well as its very probable devaluation on a horizon of thirty to fifty years remains obscure[134.] The following quotation shows the criticism made by social actors to the low levels of taxation on the mining industries while comparing the situation in Chile and in Peru. The main concern expressed by social actors is the low capability of taxation of extractive industries to become an engine for local development.

"[…] in Peru, even the smallest municipality will receive 30, 50 or 100% in royalties paid by the adjacent mining company. This does not exist in Chile. And even worse, it is taboo...therefore you cannot put the issue on the table because you are reducing

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[133] Original text in Spanish: "En la medida en que el proceso de liberalización continúa, el celebrado crecimiento económico chileno es presentado como el modelo perfecto a ser seguido por otros países. ¿Pero es el caso Chileno realmente un éxito? Si el éxito ha de ser medido por los efectos de las políticas económicas sobre el medioambiente, entonces Chile difícilmente puede ser considerado un éxito." (Altieri and Rojas 1999: 128). Translation by the author.

[134] The study of Parker about the attitude of the Chilean elites toward climate change, from another perspective, may be considered evidence in this direction. Those research states as conclusion "In our case, most of the businesspeople and politicians interviewed have a local perspective. Few "think globally", the capability of the actors to anticipate complex scenarios is rather very low. […] The ability to think of themselves as agents with the full capacity to participate as partners in global environmental governance was not present in the mainstream dominant elite´s discourse" (Parker et al 2013: 1355)

national competitiveness. [Some people may say] a serious country would not consider this. But tell me, what country signs a contract of *tax invariability* with companies? The answer is that if we did not, the investment "flight", will go to Peru... Well, yes, part of the investment will go to Peru! But do we want investments that are taking advantage of these exceptional conditions that cannot be found in any other place in the world? If we want these investments, we must yield all this...but maybe we do not want this. From these investments that we receive, how many are real pluses contributing to development and not only to economic growth? (Academic University in the northern region Chile)"[135][136]

Figure 8 describes corporate income taxes charged by the different National States to mining industries around the world. The Chilean maximal amount of royalty is only 18,5%, far below the 25% presented in countries like China, Indonesia and Kazakhstan (low levels of taxation) or in comparison with more than 40% in India and the US (high levels of taxation). Chile did not present a specific local tax to the extractive industries as many countries do. The intent of this chart is to reinforce the argument presented by academic actors who criticize the capability of the Chilean tax burden to become an engine for territorial development and so, to counteract the tendency for "uneven development" (Smith 2008).

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[135] Translation by the author.

[136] All reference to the interviews conducted in the thesis fieldwork, have been translated to the English by the author. Due to the informal character of the spoken language, there are no references in the thesis length to the original Spanish interviews.

Corportate Incomes Tax (CIT)
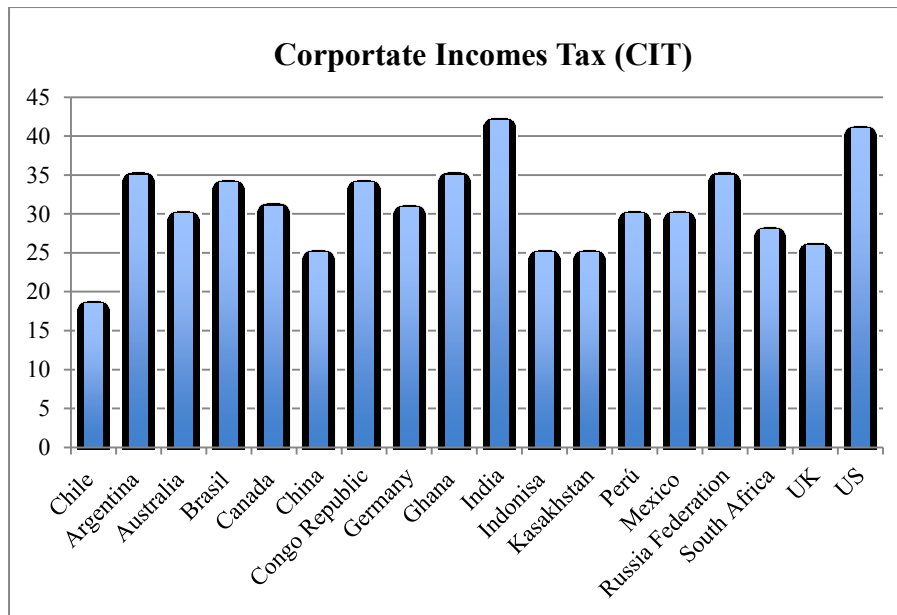
Figure 8. Graphic International level of CIT in Mining[137], selected countries[138]
Self-elaboration with data from PricewaterhouseCoopers[139]

9.1.2.- The Economic Dimension of Ecological Modernization

An intensive as well as increasingly efficient form of natural resource exploitation could be considered a central characteristic in the Chilean economic dimension before and after the implementation of the first centralized environmental law in 1994. This is particularly the case in the mining and forestry industry, which are indeed, the two activities studied in this section[140]. The orientation toward the intensification of the extractive industries makes the basis for the Chilean economical improvement at the end of the Military dictatorship in the 1980s, during the democratic transition in the 1990s, and also in the first decade of the 2000s. In other words, there is a high level of stability in the economic dimension beyond the political regime ruling the country.

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[137] Here is presented the taxation as royalty in different countries and the low level showed by Chile. Nevertheless, this situation is not only concerning with mining, but with all industries that has been called in the thesis as the extended plantation (agriculture, aquiculture, and forestry) and extractive (mining and fishing).

[138] In the cases of Canada, Germany, Russia and US the total amount have been calculated by adding the local or State taxes to the federal or national.

[139] From report: "Corporate income taxes, mining royalties and other mining taxes, A summary of rates and rules in selected countries" available in Internet: http://www.pwc.com/en_GX/gx/energy-utilities-mining/publications/pdf/pwc-gx-miining-taxes-and-royalties.pdf

[140] In this sense, Figueroa and Calfucura (2004: 165) state: "Chile's economic growth has been based mainly on the exploitation and exportation of natural resources. Even though during the last decades the volume of manufacture exports increased, still close to 90% of country's total export value corresponds to unprocessed and processed natural resources. As a consequence, there has been a depletion of natural assets, which has reduced the country's wealth, and a large environmental degradation, which has negatively affected the population's welfare."

The official discourse regarding Chilean economic performance does not attribute much relevance to the strengthening of the extractive industries. Instead it prefers a representation toward economic innovation and efficiency more attuned with the international idea of competitiveness. Nevertheless, the argument of this section seeks to demonstrate that the modernization of the ecological institution in Chile cannot be disentangled from the growing extractive orientation of the national economy, a situation that is particularly clear in the cases of forestry and mining activity. Ecological modernization could be seen from this perspective, the cause as well as the effects, of economic restructuration. I will come back to this idea in the following chapters.

i) The Forestry Sector and The Pressure for Land in the Center-South of Chile

The participation of the forestry sector in the national GDP has not achieved the level of the mining sector. In the last decade the industry represents 3,5% of the total national GDP, while mining activity is always over 20%. Nevertheless, from the year 1990 and in the last two decades, the sector did expand its exportations over 600%. Thus moving from 855 Million US Dollars in 1990 to 4.960 in 2007 and 5.452 in 2008 (FAO 2004). This expansion is based on a very high concentration of forestland in the hands of only two private companies "CMPC" and "Arauco"[141], both Chilean capitals. According to data from the National Forestry Institute[142] (INFOR 2008) these two companies together concentrate more than 71% of plantation surface and around 70% of native forest. The remaining 30% of surface in the case of plantation forest is almost totally divided between international companies.

In the territorial dimension 162.000 square kilometers, which represent more than 21.4% of the total surface of the country (756.945 km2[143]), is occupied by some form of forest, i.e. native forest or plantation. The regions of *Maule, Bio-Bio, Araucanía*

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[141] "Compañía Manufacturera de Papeles y Cartones" (CMPC) has the biggest participation in papers and pulps business as well as a large participation in wood and forestry. Arauco Company is concentrated in pulp, engineering wood and forestry business.

[142] Instituto Forestal de Chile (INFOR). Translation by the author from the Spanish original names.

[143] This proportion makes reference to what is commonly understood in Chile as the continental territory, that is, the territory in South America, which excludes the land in the Antarctic and the Eastern Island of Oceania.

and *Los Lagos*[144], where forestry industry has become the predominant activity, between 20% and 40% of the total surface area is occupied with plantation forest[145]. This data only considers the surface oriented by companies for plantation but omits the area required for treatment, manufacturing, storage and transportation. In other words, the information does not express the total surface required for the industrial process, which is far bigger. In a similar fashion the southern regions of *Los Lagos* and *Aysén*, which concentrate the biggest reserves of native forest, are targets for industrial expansion in the coming years.

Figure 9. Map of Chile, Principal regions in forest production
Based on Chilean administrative division existing between 1974-2007[146]. Self elaboration

With this information in mind, it becomes possible to comprehend the high pressures

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[144] Regions surpass: Maule: 30.296,1; Bío-Bío: 37.068,7; Araucanía: 31.842,3; Los Lagos: 66.013.1 Km2

[145] In Spanish language exist the difference between native forest and forest in plantation. The former is the original forest from the country while the last is the forest planted by the industry

[146] For the effect of information availability, the administrative division uses the old division of the country in 13 regions, instead of the new 15 enacted by law in 2007.

for land exerted by the forestry industry in Chile and presumably in all countries connected with wood and paper production. Therefore the very nature of the socio-ecological conflict provoked by this industry is not necessarily pollution. In addition, I will argue, the conflict appears through an increasing demand for land for exclusive and exclusionary uses. The following quotation engages the problem of land concentration produced by the forestry industry. The scholar's argument condemns the intention to consider existing plantation surface and native forests as one entity. In the Chilean case, plantation forest as a substitute for native forest is a very relevant social and environmental problematic.

In Chile the deforestation process continues with the native forest. People tend to add native and plantation forest together in the account. This is absurd, it has nothing to do with one another, it makes no sense to say: "we have so much native forest and so much plantation forest", this balance is the same as creating a balance between apples and berries. The roles played by the native forest ecosystems are much more complex, more diverse than the plantation forests. Plantation is agriculture, peach, cherry, pear, and apple trees could be added to native forest as well because they are all trees. The only difference is the production of fruit, tree plantations produce timber. Wherever you look there are problems, very serious ones. [...] Everyone says: "a native forest round table was made three or four years ago and came to good conclusions". The conclusion was to "disregard the conflictive issues and maintain the ones with which we all agree." They left out the replacement of native forest with plantation forest, and this should not occur for any reason. There is enough land for reforestation in Chile, over 2.000.000 hectares, without the need to touch native forest and to retrieve soil in deforested sites. (Academic University of Chile)[147].

In the Chilean context, the socio-ecological conflict as a result of the expansion of the forestry industry does not only exist as astonishing pressure over territory. Regrettably, the best soil and climate for forest plantation coincides with the location of native forests, which have been the ancestral settlements of the Mapuche population, the most prominent pre-Colombian ethnic group in the south of the continent. It is possible to argue that previous agricultural activity and forestry

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[147] Translation by the author.

activity today, are responsible for the systematic eviction of the Mapuche population from their ancestral territory. Historically, Mapuche land was never conquered by the Inca Empire, which remained north of the *Maule* River. The Spanish kingdom did the same in colonial times, staying north of the *Bio-Bio River*. In this sense the occupation of the *Araucanía*, the name given by the Spanish to the territory that remained under control of the Mapuche population in the conquest and colonial periods, only occurred in the late XIX century (Bengoa 2000)[148].

Nowadays, this social conflict remains unresolved, exacerbated by the cultural clash of the concept of ancestral right to land and the modern notion of private property. Strikingly, this conflict did not reach the status of a socio-ecological problem in the public opinion, even though it has without doubt the capability to dictate the type of society-nature relationship for a vast proportion of the national territory. The forestry industry is also a source of conflict for small agriculture because plantations use and pollute different sources of water by acidification. The following quote by a state policy maker makes this aspect of the socio-ecological conflict between forest industry and local community explicit.

"In the southern lands [indigenous groups] cannot sell their land, but they are available for lease. So, what could I do? Forestry companies lease these lands to plant eucalyptus and pine forests, which imply degradation of the soil quality, as well as groundwater pollution. This problem occurs in communities such as Renaico and Collipulli where there are large forestry plantations; therefore, all the water is used, which makes it impossible to cultivate anything in the fields close to these forests industry" (Director of the National Agency)[149]

It becomes important to highlight how the same municipalities with higher levels of penetration by the forestry industry are those with lower levels of human capital. In saying so, I intend to describe how the expansion of the Chilean extractive industry has repercussions as well as variants in the cultural and social sphere. This condition for socio-ecological conflict is mostly rejected in environmental policy. In the second

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[148] The map of Chile presented above shows almost exactly the territory under dispute with the Mapuche people: Maule, Bío-Bío and Araucania regions.
[149] Translation by the author

section of this chapter there is an explicit intention to enlarge the spectrum of socio-ecological problems, with special attention paid to the subject of land and water monopolization.

The following quote by Solórzano (2007) summarizes well the brief account made of the forestry industry in this section: "forestry production in Chile has shown a considerable expansion since the promotional policy initiated in 1974. Since 1994 exports have reached the highest historical values. Nevertheless, in the last decade the regions of Maule, Bio-Bio, La Araucania and Los Lagos, where the activity is located, are those with the lowest levels of human development among all regions of Chile. Therefore the question arises: to what extent does expansion of the forestry sector contribute to improving opportunities for the population of these regions […]"[150]. Summarizing, the section shows four forms of socio-ecological conflict as consequence of ecological modernization in the economic dimension: i) the high pressure for land in the center south of Chile, ii) the intensification of the Mapuche conflict, iii) deterioration of small agriculture, and iv) poor improvement in welfare for the local community.

ii) The Mining Sector and the Monopolization of Water in the Most Arid Desert in the World

The mining industry has traditionally been considered the central form of economic activity in Chile. In a very brief historical description, the first form of mineral extraction in the northern area of the country was sodium nitrate, also known as *Chilean or Peruvian saltpeter* because of its large concentration in the Atacama Desert. During the XIX and beginning of XX century, the worldwide demand for this mineral was almost exclusively fulfilled by Chilean production, which after the Pacific War against Peruvian-Bolivian confederation (1879-1884) obtained hegemony over the region and a monopoly of the mineral extraction. This economic advantage lasted until the development of an industrial process to produce ammonia was

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[150] Original texts in Spanish: "La producción forestal en Chile se ha expandido notablemente a partir de la política de promoción iniciada en 1974. Desde 1994 sus exportaciones han alcanzado los mayores valores históricos. En igual período, las regiones del Maule, del Bío-Bío, de La Araucanía y de Los Lagos, donde se localiza la actividad, son las que presentan los menores niveles de desarrollo humano entre todas las regiones de Chile. Por lo tanto, cabe preguntarse en qué medida la expansión del sector forestal contribuye a mejorar las oportunidades de la población de dichas regiones […]".Translation by the author.

discovered by the German chemists Fritz Haber and Carl Bosch in the 1940s. This completely reorganized the saltpeter market, leading to the so-called saltpeter crisis in Chile in the first half of the XX century[151]. Also highly relevant, a later form of mining activity developed in Chile in the form of copper extraction. For half of the XIX century copper extraction appears as a relevant economic activity in the country, but it is only in the XX century when this type of mining reached a large scale. From the beginning of the century until the 1970s American companies owned the largest deposits: Anaconda Copper Company owned "Chuquicamata", the biggest open copper mine in the world located in the Atacama Desert in the north of Chile. Kennecott Corporation owned "El Teniente", an underground mine located in the Andes in central Chile.

Figure 10. Map of Chile, Principal regions in mining production
Based in Chilean administrative division existing between 1974-2007.
In orange the so-called big open mines regions, in red the underground-mines. Self elaboration

International companies made their industrial origins in the exploitation of copper and

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[151] For a brief account over Chilean History see Sergio Villalobos (1983) specially "Crisis del Salitre" on page 192. For a deep account on the social social problem connected to the worsening of the market condition for saltpetre as product of the first world war, see Yañez (2008) chapter four: "Crisis social e identidad Laboral". For a deep account on the saltpetre society and culture see González (Ed) (2013)

saltpeter. Saltpeter was extracted mainly by English companies during the XVIII and the beginning of the XX century, while American companies exploited cooper until the *cooper nationalization* in Chile in the seventies. Nationalization meaning a return of ownership to the State of copper deposits, extractive industry and international commercialization[152]. The intention of this process was to return mineral sales' revenues to the country and its population. The situation changed in 1982 with modification to the Law 18.097 (Constitutional Organic Law on Mining Concession), which opened up mining activity in the form of exploration and exploitation to private capital.

Chile has been the largest international producer of copper for many decades. Looking to the present situation as an example, from 2004 on Chile achieved major levels of production, of more than 5 millions tones per year. The country provides more than 35% of total international production, which by far exceeds the situation in the oil market where the largest producers, Saudi Arabia and the Russian confederation, represent only 12% each of international production. From another side, the National Copper Corporation of Chile (CODELCO) is the major company in the business, producing around 2 millions tones of the mineral every year[153].

The copper industry is the central motor of the Chilean Economy and a very important part of public policy deployed in the country. Between the years 2006 and 2007, the participation of the mining industry in the national GDP was around 23% and for the year 2010 was 19,2%[154]. In the same way as forestry activity, mining production is spatially located in a well-defined area, the Atacama Desert or what is defined in Chilean geography as the Big North (Norte Grande).

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[152] To observe the nationalization of copper in the context of the Chilean socialist government of Salvador Allende see Bitar (1996). In the same way, but from the first actors perspective see Salvador Allende (1960) "Cómo vamos a Nacionalizar Nuestro Cobre". From the relevance of the cooper in the 70s for Chile, see Ffrench Davis (1973) and Novoa (1972)

[153] Data for Chilean copper production with bases in COCHILCO (Chilean Copper Commission). Available in Internet http://www.cochilco.cl/estadisticas/produccion.asp

[154] Data for mining industry in Chilean GDP with bases in Central Bank of Chile. Available in Internet http://www.bcentral.cl/estadisticas-economicas/series-indicadores/index_aeg.htm
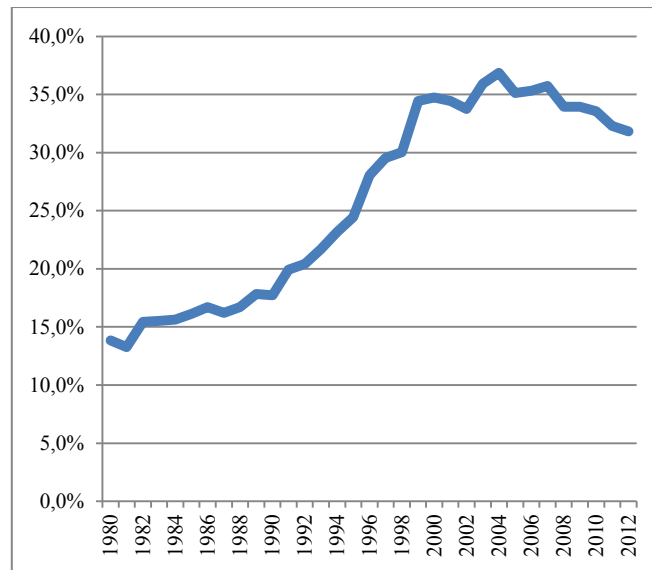
Figure 11. Graphic Chilean participation in the world copper production
Self-elaboration using data from COCHILCO Chilean Copper Corporation, Statistics

The most concentrated regions of mineral production are *Antofagasta* and *Atacama* (see map above). In the case of copper production, the industry seems not to exert pressure over land, as is the case of the forestry industry, but water. The mining industry in general and the copper industry in particular have been undermining the scarce water supply for human consumption that exists in the Atacama Desert. There has been a monopolization of water in large volumes for the process of mining tailings. This requires no further explanation how pressure for water should be understood as a millstone in the socio-ecological conflict in a desert region. Nevertheless, become relevant to state that even when the Atacama Desert it is not one of the largest in the world it is definitely the driest, where some zone have no registered precipitation since worldwide records have been available[155]. Therefore the question of water supply for other activities becomes a central issue.

In the environmental performance report developed by the Organization for Economic Co-operation and Development for Chile in the year 2005, mining activity was evaluated preferentially with regard to air pollution. Water was considered only regarding pollution and how liquid pollutants are dumped in rivers, lakes or the ocean without proper treatment. The report concentrates its evaluation on the dimension of *water quality* and does not make a central reference to the pressure for *water*

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[155] See National Geographic "The Driest Place on Earth", Available in Internet http://ngm.nationalgeographic.com/ngm/0308/feature3/

monopolization. The international report did warn the government about the risk of freshwater dilapidation: "[…] a large proportion of freshwater species is endangered" (OECD and ECLAC 2005: 69)[156]. This situation has not changed in the last ten years.

An important antecedent to understanding water management in Chile is the privatization of the right to use the resource, as declared during the military government. In the National Constitution of 1980, water is understood in its social function as well as an economic good; in virtue of the second, the right to use water is given to the privates by the State[157].

Monopolization and the pressure for water have been better addressed in the world wide *Environmental Performance Index* developed by Yale and Columbia University[158]. In this report Chile dropped from 16 in the year 2010 to 58 in 2012. This decline is explained by three factors i) the carbonization of the energy matrix and increase in CO_2 emission, ii) constant degradation and reduction of native forests and, iii) poor use of the water resource, especially in terms of pollution and abuses made by big industries, particularly mining activity. Using data from the Public Works Ministry (MOP)[159], the consumption of water for mining activity is twice that proportion destined for human consumption in the whole country and six times bigger in the region of the Atacama Desert.

Once a private company or person receives the right to water, they are allowed by law to organize market transactions with the resource and obtain profit by selling or buying it. In this context, and from a very orthodox neo-classic economic standpoint, markets will ensure the better allocation of resources. But what in fact occurs is the reinforcement of a central socio-ecological conflict for water. The social value of water is negated, especially for rural and native communities settled in the vicinity of large extractive industries, but also for the largest cities in the northern region of the country. The following quote shows the great dissatisfaction of local and native populations with the way in which the National State organizes the right to water in

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[156] Original text in Spanish: "Una gran proporción de las especies de agua dulce está en peligro." Translation by the author

[157] For a comprehensive approach to the social conflict for water in Chile, see Larraín and Poo (2010)

[158] Available in Internet http://epi.yale.edu/epi2012/rankings

[159] Ministerio de Obras Públicas (MOP). Translation by the author from the Spanish name.

the country since the beginning of 1980. This institutional framework was created during the dictatorship regime, and it is now impossible to distinguish if the new democratic government of the last 25 years inherited this legal framework or intensifies it.

"They polluted our water in 1998. In 2001, the Chilean State declared the Loa River exhausted and since then nothing has been done to resolve the problem. Those responsible for this pollution are CODELCO and Soquimich. These companies still continue purchasing water rights, taking advantage of people's financial needs. Currently, we do not have water resources for agriculture. Quillagua receives polluted water from Calama. I am angry with the Chilean State" (President of an Aymara community)[160][161].

In scenarios of water scarcity, the economic mechanism would increase the probabilities of water supply for the social agent with better capability to pay. In the same process, the market mechanism will violate the social and human right for access to freshwater, to every social actor with low capability to pay for it. This is exactly the situation in the desert where the mining industry has the advantage to monopolize water resources. The following quotation expresses the dramatic consequences of the water conflict for the native population in the Atacama Desert.

"The traditional activities, which justified the presence of rural human settlements and generated community control of water resources, are disappearing [...] A community that does not have a water supply cannot exist as a community and is unable to work; therefore, it loses its social discipline, which would have implied protecting terraces, maintaining crops, cleaning irrigation channels, and distributing water in a socially equitable way. The community has no reason for continuing to exist if this social discipline disappears; hence, most of its residents will move to the city" (University

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[160] Radio Station, University of Chile. Available in Internet http://radio.uchile.cl/afondo/89184/ Translation by the author.
[161] The Aymaras and Atacameños are the two most important pre-Columbian native groups in the Atacama Desert. The Atacameños inhabit historically the Atacama Desert in Chile and Argentina, while the Aymaras inhabit the Andes in North Chile, South Peru, and Bolivia. It is estimated that the Atacameños have been around since the fifth century, while the Aymaras' origins can be traced back to around 2000 years BC, even before the Inca Empire ruled the region.

Academic)[162].

The scholar is very explicit when stating that community bonds between people and the territory are tense and even broken by pervasive and negative influences of mining activity in terms of water distribution at the local level.

9.1.3.- The Political Dimension of Ecological Modernization

The main elements that characterize the political dimension during the 1990s are the so-called *democracy recovering* and the process of *democratic transition* from the military regime (Drake and Jaksic 1995, Godoy 1999, Nagy 2005). It is not the object of this work to describe in depth the situation, however, it becomes indispensable to explain some elements to better understand the context in which ecological modernization functions. The main argument of the thesis, as many other authors would propose, states that the Chilean democratic transition is not breaking with the socio-economic and environmental organization of the dictatorship regime. On the contrary, many points of convergence and continuity exist.

Almost one decade after the coup d'état in 1973, the military regime changed the constitutional law with the referendum of 1980 and introduced explicitly the notion of *protected democracy*[163] as the socio-political way to legitimate their government and the total abandonment of the previous socialistic system. In this context, it is the *threat of chaos* lived between 1970 and 1973 that becomes the justification to allow a profound transformation of the political institution, particularly, connected with the party system and the public policy action (Moulian 1997). It was the supposed *strong failure* of the socialist government of President Salvador Allende that was presented as evidence for a radical transformation to Chilean political life and public institutions. From this moment on, the public sphere was organized and supervised by the military, particularly in the following dimensions: i) eradication of the communist and socialist parties and the repression of their supporters, ii) recomposition of macro-

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[162] Translation by the author.

[163] For a good account of the Chilean democratic transition to "civilian government" in English language, see Brian Loveman (1995) For the "irony" of the transition which seek dismantling Pinochet`s protected democracy instead of make a profound democratic reform see Mark Ensalaco (1994) For the crisis of representation in post-dictatorship period see Margot Olavarría (2003)

economic stability after the hyperinflation of the seventies, iii) reformulation of the political pact with a new constitutional law, and iv) generation of social and economical disciplines within a neo-liberal model of organization[164].

It is this neo-liberal orientation, fruit of the alliance between General Pinochet and the economist group informally known as *Chicago Boys* (Valdés 1995), that remains the essential core of the military regime to today. The socio-economic organization inherited from that period remains stable despite the transformation in the political sphere to democracy. In this section evidence will be gathered to sustain that the political context of ecological modernization in Chile could not be fully addressed without considering the privatization of different areas of public policy, and a central element being the support given by parliamentary deliberation for this political turn to neo-liberal orientation, particularly in social and environmental policy.

After the plebiscite of 1989 and together with the failure of Augusto Pinochet as a democratically elected national president, the notion of *representative democracy* took place in the public arena. The figures of amnesty law for crimes committed by armed forces between 1973-1980 and parliamentary immunity for the former dictatorship in the 1990s should be considered as key elements of the Chilean model of democratic transition. This situation it is not exceptional in Latin America; a similar movement was made by the Uruguayan society when in two opportunities, and by the national plebiscites of 1989 and 2009, maintenance of the amnesty law enacted in 1986 was agreed upon[165]. Under this political configuration the Uruguayan society was prevented from judging the crimes against humanity that had occurred during the military dictatorship between the years 1973-1985. Only during the governmental term of President Tabaré Vázquez (2005-2010) was an important step in solving this *democratic deficit* made by judging and imprisoning important hierarchs from the military regime (Chasquetti 2007).

By connecting the cases of Chile and Uruguay it becomes possible to argue the existence of a particular socio-political arrangement in Latin America after the

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[164] For the economic characteristics of Chile in the military regime as well as in the two first democratic governments after, see Ricardo Ffrench-Davis (1999)

[165] For a better account on the Uruguayan political situation at the end of the 80s, see Diaz and Abella (1987)

military regimes in order to build up the so-called *democratic transition*. This process shows some commonalities and differences between the countries, regions that both experienced military regimes. The different forms of *amnesty* are examples of how the political arena is articulated with the intention to allow reincorporation of political elites to the ruling process, while the military gradually withdrew. The absence of the judicial processes against dictatorships, in most countries of Latin America in the beginning of the democratic transitions, should be interpreted as forms of political continuity between the previous and new periods.

Amnesty in Chile is accompanied by a growing confidence in parliamentary deliberation as a legitimate decision-making institution after seventeen years of constitution, legislation and public policy being defined in an authoritarian fashion. This social confidence in the Parliament has been over the real efficacy or the substantive quality of parliamentary deliberation. The central relevance given to national plebiscites occupies a similar role in the case of Uruguay, and could be seen as similar to Chilean over-confidence in parliamentary deliberation. In Uruguay the extended belief in the national referendum went over what is internationally recognized as the social limits of democracy. It was only through intervention by the Inter-American Court of Human Rights in 2011 that reverted what the Uruguayan society seemed to prevent: to judge crimes against humanity that occurred during the military regime. In other words, there is an over-confidence in the political mechanism to regulate social conflict inherited from the military regimes. The public opinion appears only concerned with human rights' violations. Without diminishing the relevance of this conflict, which remains in certain ways still open today, it is a fact that it helps to blur the strong transformation in social and territorial policy that is emerging. Both situations are central to understanding the strong and pervasive exclusionary experience for thousands of persons in the country.

In the democratic transition period the Chilean parliament enables continuity to neo-liberal policies established during the dictatorship regime. The 1990s could be seen as marked by two different movements. From one side, an increase in spending in social policy, especially concentrated with the aim to reduce poverty and extreme poverty, and from the other side, the intensification of State support for public policies that introduce market mechanism into the provision of housing, education, health

insurance, social security, and environment care. This last situation demonstrates highly discriminatory and segregating effects[166].

The coexistence of these two orientations within public action and the intention to maintain macro-economic stability are what the political elite in the beginning of the 1990s called *changing in stability*. This is the most emphasized condition of the Chilean model of political transition. In order to illustrate the economic orientation of the military government as well as the continuity in the first democratic presidential period to the public policy adopted in dictatorship, I will quote extensively the explanation given by the Chilean economist Ricardo Ffrench-Davis in his work "Chile, between neo-liberalization and growing with equality".

"The initial concerns of the dictatorship government of Pinochet were directed to control the macroeconomic imbalances and in particular the inherited hyperinflation (600% in 1973), thereafter the argument moved into the field of inefficiencies of the prevailing economic system, according to the neoliberal discourse that in later years became internationally popular. As an ultra-neoliberal group extended its power until hegemonize the public policy conduction, the range and depth of structural change was overstressed [...] Governments of the Coalition decided to avoid radical changes in current economic policies and sought "a change in continuity", breaking with the tradition of many previous governments, characterized by its re-foundational nature. To achieve this goal, Aylwin's government strove to gain the support of unions and involve workers in the macro-social decision-making process." (Ffrench-Davis, 2003: 71-79)[167].

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[166] For a deep account on the institutional, economic and social transformation in Chile as product of the military regime, see Martinez y Diaz (1996) Chile, the great transformation. The title in direct relation with the classic book of Karl Polanyi (1944 [2001]) "The great transformation, the political and economic origins of our time"

[167] Original text in Spanish: "Las preocupaciones iniciales del gobierno dictatorial de Pinochet se encaminaron a controlar los desequilibrios macroeconómicos y en particular la hiperinflación heredada (600% en 1973); luego, la argumentación se trasladó al terreno de las ineficiencias del sistema económico imperante, de acuerdo con el discurso neoliberal que en los años siguientes se popularizó internacionalmente. A medida que un grupo ultra-neoliberal ampliaba su poder hasta hegemonizar la conducción de la política pública, se fue extremando la gama y profundidad de los cambios estructurales. […] Los gobiernos de la Concertación decidieron evitar los cambios radicales en las políticas económicas vigentes y buscaron un *cambio en continuidad,* rompiendo así con la tradición de varios gobiernos precedentes, caracterizada por su naturaleza refundacional. Para lograr este objetivo, el gobierno de Aylwin se esforzó en obtener el apoyo de los sindicatos e incorporar a los trabajadores en el proceso de toma de decisiones macro sociales." Translation by the author .

9.1.4.- The Social Dimension of Ecological Modernization

The social dimension of the 1990s could be characterized by an implicit social agreement around the *democratic transition* model constructed in the political and economic spheres. The promise of economic development in the frame of a reconstructed democracy appears as achievable in the representations of political and economic elites, as well as in the beliefs of the extended population. In this sense, the restored social institution does not question the liberal orientation of public policy during the military regime, and market mechanisms are intensified in the most relevant policies: education, pension, health, housing, urban development, regional planning and environment.

In this context is possible to argue that governments tackled the problem of social justice and redistribution only by increasing social expense in poverty and particularly in extreme poverty. Nevertheless, governments avoid confronting problems associated with the deployment of highly segregating public policies, especially the phenomena of *social disintegration* (de la Masa 2005). All of this has been reshaping the social and territorial scenario, changing urban structures as well as rural organization, materially and symbolically, for the last 30 years.
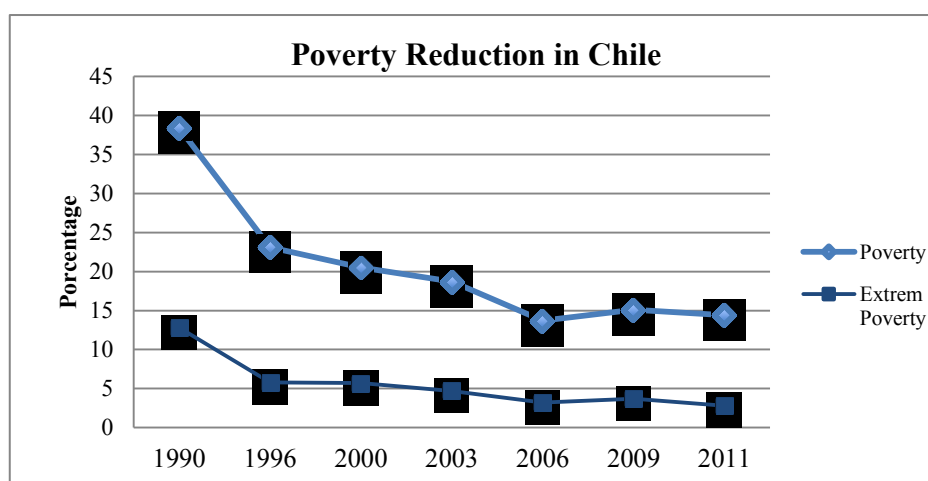
Figure 12. Poverty reduction in Chile between 1990-2011
Self-elaboration with data United Nations Development Program[168]

In the 1990s the model described above appeared as a plausible way to organize Chilean society. Confidence in the parliamentary process remained stable for almost

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[168] With bases in information available in Internet http://www.pnud.cl/areas/ReduccionPobreza/datos-pobreza-en-Chile.asp

two decades, while the market instruments, which ensure economic growth and poverty reduction, were constantly reinforced. This situation was maintained into the first years of the new century, but was slowly challenged by the civil society, which claims the need for a new social pact. The following quotation of the National Organization of NGO (ACCION AG) strongly expresses this.

"Chile now lives crucial moments to its democratic future. We are not dealing with mere social unrest. The demonstrations developed in recent months, expressed in: the struggles of the Mapuche people, public and private workers' manifestations, large protests against projects that attack the environment and the mobilization of the regions, which included territories stoppage at the ends of country, demanding for effective decentralization, request for recognition of sexual diversity and rights, protests by residents affected by the earthquake and tsunami, and many others, have shaken the conscience of the country. It thus opened the way to democratic and massive expression of hundreds of thousands of citizens who advocate for a more just and inclusive country where the rights of individuals and peoples are effectively respected" (ACCION AG 2011)[169].

In the last years of the first decade of the XXI century, social movements have emerged in all areas of public policy where market logic was promoted, as well as in the call for civil rights recognition. In 2006 a first social movement, organized by secondary students call "Penguins Revolution"[170], captured the attention of the mass media. The core of the demonstration during those days was the low quality of learning processes and infrastructure of the public school system. This Situation reemerged in 2011-2013 but this time is organized by university students, confronting

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[169] Original text in Spanish language: "Chile vive hoy momentos cruciales para su futuro democrático. No nos encontramos ante un simple estallido social. Las movilizaciones desarrolladas en los últimos meses, expresadas en las luchas del pueblo mapuche, las manifestaciones de trabajadores públicos y privados, las grandes marchas contra proyectos que agreden el medio ambiente y las movilizaciones de las regiones, que incluyeron la paralización en los territorios extremos del país- en demanda por una descentralización efectiva, la demanda de reconocimiento de la diversidad sexual y sus derechos, las protestas de pobladores damnificados por el terremoto y maremoto y muchas otras más, han remecido la conciencia del país. Se ha abierto de esta forma el camino a la expresión democrática y masiva de cientos de miles de ciudadanos y ciudadanas que abogan por un país más justo e inclusivo, en que los derechos de las personas y los pueblos sean efectivamente respetados." Available in Internet http://accionag.cl/wp-content/uploads/2011/11/Documento-Politico1.pdf Translation by the author from the
[170] "*Revolución Pingüina*" is the name given to this student movement by appealing to an informal way to call the traditional school uniform and their colors.

the whole system of higher education: highly privatize, very expensive, with very low capability to redistribute social benefit. Chile joined the OCDE in 2011 and is the country with the lowest level of State financial aid for higher education and the country with the most expensive enrolment fees[171]. A similar situation has been seen in terms of housing policy, provisions and health care.

In terms of environmental policy, in 2011, social movements appeared in public space, expressing opposition to the construction of five mega hydroelectric plants in the Chilean Patagonia. The principal claim was to reject the destruction of the natural patrimony of Southern Chile. According to data from Newsletter La Tercera Polling Center's survey, 74% of the Chilean Population rejected the project "Hidro Aysén" in 2011[172]. In 2006, ecologist and the indigenous population unsuccessfully protested the construction of a hydroelectric plant in the Bio-Bio River[173].

In this scenario the social sciences offer two alternative theses: The first will stress the idea that the country achieves a level of economic development which would promote the emergence of a *new citizenship,* aware of social problems of a *second generation*, such as quality of life, social justice and the legitimacy of the political system. In this situation the social movement and social discontent are understood as natural symptoms of societal transformation in terms of improvement of the material condition of life.

The second thesis will challenge the previous interpretation and claim that there is nothing normal informing social discontent. In the previous formulation the emergence and re-emergence of social movement is not the result of an improvement in quality of life. The political system in terms of party representativeness and orientation of public policy has lost legitimacy because State action has proven to be

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[171] According to OECD data, from the whole spending in high education in Chile, students' families pay the 83,7%. See OECD and World Bank, "Tertiary education in Chile" (2009: 55 pp from the Spanish Version) with reference to OECD education at a Glance (2007).

[172] "[Surveys] reveals a broad and transverse resistance to the project approved this week by the commission of environmental impact assessment." Available in Internet La Tercera on-line date 15.04.2011 http://papeldigital.info/lt/index.html

[173] The former president Eduardo Frei (1994-2000) starts the so called *"Frei Environmental Doctrine"* when participating in the inauguration of a mega hydroelectric plant in Alto Bío-Bío, the original settlement of one group of the Mapuche Population, and without considering any of the many objections to the project stated.

the engine of segregation, and by no means a tool for its reduction. Social movements are an expression of an extremely unrepresentative political system, an unequal socio-economic organization, segregating policy action, and a destructive form of relationship with the environment. This order has remained stable for more than 30 years, as one of the characteristic of the Chilean *democratic transition*. Nevertheless, different social movement proclaims the urgency of change.

"With this background it is clear that mass mobilizations are not the expression of a country that becomes normal, but rather a symptom of complete political-institutional abnormality that has persisted since the democratic transition in the 1990s and which ended up enclosing the country into a restricted constitutional framework, these limits are ensuring the perpetuity of an unequal socio-economic order." (Ocaranza 2011)[174].

If there was something like a social pact in the beginning of the 1990s and during the democratic transition, it was aligned by three interconnected orientations: i) to ensure political stability, ii) to guarantee the withdrawal of the military, and iii) to maintain a pattern of economic growth promoting market liberalization and the fostering of private initiatives. This pact, promoted by political and economic elites and accepted by the civil society, has been contested recently. Social movements seek new models of social integration based on solidarity and the restriction of market logic in the public sphere. The last quotation of Ocaranza could be understood as an expression of the crisis of the social pact inherited from the military regime.

Chilean ecological modernization between 1990 and 2010 should be considered as an accentuation of the social tensions explained above. The consequences of the environmental policy are not only related to ecosystem conservation or destruction. In addition to it, there is a very relevant social dimension whenever we observer how the patterns of localization of environmentally damaging activities appear recurrently, located in the vicinity of disadvantaged populations. From this perspective, the

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[174] Original text in Spanish: "Con estos antecedentes, es claro que las masivas movilizaciones no son la expresión de un país que llega a ser "normal", sino más bien el síntoma de una completa "anormalidad" política-institucional que se arrastra desde la transición democrática en los años 90 y que terminó enclaustrando al país en un marco constitucional restringido, cuyos límites aseguran la perpetuidad de un orden socio-económico desigual." Available in Internet http://ciperchile.cl/2011/08/26/mas-alla-del-conflicto-educacional-malestar-social-y-crisis-de-representatividad-politica-en-chile/. Translation by the author.

society-nature relationship could be interpreted as a movement toward the depoliticization of the socio-ecological conflict. "For the Chilean extractive industries, it is not ventured to note that the depoliticization of the environmental conflict has been the result of managerial logic access, even though they may be oriented by sustainable principles" (Campos-Medina and Larenas 2012: 53)[175]. The notion of socio-ecological conflict will be explained in detail as a way to approach the environmental dimension in the contextualization of Chilean ecological modernization

9.1.5.- The Environmental Dimension of Ecological Modernization

Coupled with the social movement for democracy at the end of the 1980s a sort of dissatisfaction with the environmental conditions in the country appears. In that sense, the democratic return is presented as the perfect scenario, in the opinion of a variety of social actors, to drastically change regulatory environmental framework.

The first scientific environmental meeting, which took place in the city of La Serena in 1984 is considered a milestone for the consolidation of a scientific perspective toward the national environmental situation. These scientific encounters continued during the 1980s and have been reinforced by the international turn toward environmental protection. During 1987, in what is traditionally called the Brundtland Report "Our Common Future" (World Commission on Environmental and Development 1987), the notion of sustainability appears as a suitable framework to organize the society-nature relationship. "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (1987:43)

International concern for environment appears previously at the Stockholm Conference of 1972 and with the publication of the book the "The Limits of Growth" (Meadows et al 1972), and were both very well known in academic and political circles in Chile. These two events are responsible for an extended institutional awareness about environmental damage around the world and for the incorporation of

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[175] Original text in Spanish: De esta manera, no resulta aventurado señalar que para el caso de las industrias extractivas chilenas, la despolitización del conflicto medioambiental ha sido el resultado del acceso de lógicas de gestión (managment), aun cuando están orientadas por el principio de la sustentabilidad." Translation by the author.

the right to live in a pollution-free environment, in the National Constitution of 1980, enacted in times of dictatorship. In the Chilean mass media and public opinion, the case of air pollution provoked by mining smelting plants in the north of country and the high levels of air pollution in the capital city are widely considered central emblems of the ecological crisis.

The third Chilean scientific conference regarding environment was held in the city of Concepcion in the context of the first presidential election following the military regime. This appeared as the perfect moment to pressure the political system for a change in the national environmental institution. At this moment the two most important presidential candidates undertook a compromise to create a National Institution to regulate environmental conflicts. A few years later the United Nations' Environmental Program for Latin America (PNUMA) published the influential "Propuesta de ley básica de protección ambiental y promoción del desarrollo sostenible" (PNUMA: 1993)[176]. Both episodes strongly influenced the creation of the National Commission for Environmental (CONAMA) as the Chilean answer to the ecological crisis.

CONAMA was enacted in 1994 as a transversal institution, meaning, an institution responsible for coordinating all other State offices with some degree of environmental influence in the country. Two historical fact are relevant at this moment i) the PNUMA proposal encouraged Latin American States create Environmental Ministries as stronger institutions in opposition to a simple national commission, and ii) the CONAMA begin functioning in 1994 as a governmental department but the enactment of environmental regulation, particularly regarding environmental impact assessment, only began in 1997. These two facts appear as evidence of a weak environmental institution in Chile at the origin of the process of ecological modernization. It was especially weak in dealing with an economic activity based extensively in enormous investment for raw material production. Every company connected with the extractive and plantation industries was able to mobilize more economic and social capital than the National Commission of Environment.

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[176] Acronym in Spanish Language

The changing of the environmental legal framework without really implementing a novel one has been called an interlude, which is particularly profitable for the expansion of the extractive industry during the 90s in Chile (see Campos-Medina 2012). Consequently during Chilean ecological modernization, the people's right to live in a pollution free environment is reduced. Overconfidence in the capability to harmonize economic development and environmental care is increased. A pattern of stability between the society-nature relationships appears but based only in the commodification of nature before and after the return to democracy was consolidated during the first wave of ecological modernization.

In what will be termed the second wave of ecological modernization, and corresponding to the creation of the Environmental Ministry, the Environmental Superintendence and the National Agencies for environmental impact assessment and bio-diversity, the commodification of nature would not change substantially. Social actors consider the creation of the ministry as an improvement in the capabilities of control over the companies in the extended Chilean territory.

The period after 2010 is organized in terms that ensure an increase in actor's compliance with the environmental norm. The extended social representation proposes that the Chilean ecological crisis is based on problems of control and not deficit e.g. in the incorporation of sustainability measures or environmental management by the big extractive industries. This representation was reinforced by the OCDE and ECLAC (2005) reports that recommend Chile expand market mechanisms to regulate environmental conflict. So-called *"compliance incentives"* are enacted by law with an extended social acceptance.

The harmonization of economic developed and environmental care proposed by the international agencies is far from possible in Chile. In opposition to developed economies, the national global integration rests extensively in extractive processes that are rapidly acquiring a regional extension that covers thousand of kilometers (see maps for mining and forest activity above). In this sense, the environmental context of the Chilean ecological modernization could be characterized by the re-emergence of socio-ecological conflict. The increasing social and human consequences of the extractive industries by stressing scarce resources as land, water, energy and working

force are far from being tackled. The economic sustainable approach shows inefficient to organize an integrative and responsible society-nature relationship. As will be shown in the following section, the social struggle appears when the technification environmental legal framework replaces the social need to engage long-lasting debates and agreements. The next section focuses on the socio-ecological conflicts as a plausible and fruitful perspective to study the ecological modernization in Chile.

9.2.- Socio-Ecological Conflict; A Central Notion for Analyzing Ecological Modernization in Chile

9.2.1.- The De-Politicization of Socio-Ecological Conflict in Chile

The last two decades in Chile have been characterized by a profound transformation in the environmental institution. In this context, and as was stated before, two moments appear prominent: i) The implementation of the National Commission of Environment and the Environmental Impact Assessment in 1994 and; ii) The creation of the Environment Ministry, the Superintendence and the Environmental Courts in 2010. The novel Chilean ecological institution contributes to a rhetoric of modernization with bases in i) institutional improvement, ii) concentration of function, iii) transversality in policies, and iv) increasing efficacy.

This section criticize the process represented solely as institutional improvement and offers the alternative thesis of a growing process of depoliticization of the society-nature relationship at the core of Chilean ecological modernization[177]. In doing so, the argument focuses on the notion of socio-ecological conflict and distinguishes between a passive and active process of de-politicization. The former is understood as the discursive framing of the ecological crisis under the concept of sustainability, one exclusively concerned with pollution control and the rational extraction of resources. The latter will show how the current interpretation of ecological crisis has actively excluded alternative interpretations of the problem, with a particular focus on the social and human consequences of mega-projects in non-urbanized areas of Chile.

It is particularly relevant for this analysis to explore the process and mechanisms by which government authorities as well as the mass media render the claims made by civil society and different social movements. These social groups seek to broaden the socio-ecological conflict, related especially to the topics of: i) mining activity, ii) the national energy policy and iii) land conflicts between hydroelectric companies, the forestry industry, and the Mapuche population. In each of these areas it is possible to

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[177] Other scholars would not describe the Chilean ecological modernization as a process of de-politicization, in the sense of the lack of politics. Instead they would propose the intensification of the technocratic model for social regulation in every sphere of public policy and especially in the environmental one. Here de-politicization is observed by the perspective of the re-politicization running in the country in the last four or five years. In other words, the thesis makes focus in the intent of population to participate of the political deliberation about the society-nature relationship

claim that the same search for sustainability not only ineffectively manages the emerging socio-ecological struggle, but also reinforces it.

Mining activities exert an enormous pressure for water and energy to the level of endangering its availability for human consumption in the north of Chile (see previous section on national context). The improvement in sustainability proposed by the mining industries by using green energy and seawater would be rather marginal in this socio-ecological struggle. The rising production foreseen for the next ten years is only possible by means of exhausting fossil water deposit in the Atacama Desert or by new thermoelectric energy production by coal combustion located in poor municipalities of that region[178].

In the south of Chile the Mapuche conflict for land has been reinforced by the confluence of two industries. From the one side, the national energy policy intends to increase hydroelectric power as a means to pursue national autonomy. This strategy does not question the extreme regional dependence upon which it is being built, and especially its concentration on Mapuche's land. On the other hand, the forestry industry's search for sustainability increasingly requires extra land for future plantation that coincides with southern rain forest, of which a relevant proportion is the natural habitat of the Mapuche population. As it is impossible for companies to buy the native population's traditional land, they apply strong pressure for leases over very long time spans[179]. These two facts together have caused, or put otherwise, inform a basis for constant eviction of the Mapuche population from their traditional lands.

Each of these socio-ecological conflicts have unforeseen repercussions in the territorial and social dimensions of Chile. Nevertheless, their consequences have been legitimated, until now, through discursive strategies deployed by the authorities and the mass media. Explaining these processes should be considered the main focus of

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[178] A similar situation is running in the Magallanes region, extreme south of Chile, in which also there are project to install coal mining to supply a thermoelectric production of energy.

[179] Law in Chile enacts restriction to selling land from native population, especially when this land has been returned to them. From the other side, permissions required to develop project that may affect the rights of native population are assumed by Chile by the ratification of the ILO convention No 169. See: http://www.ilo.org/indigenous/Conventions/no169/lang--en/index.htm

this research. In a broader vision, the section is expected to introduce a critical perspective over the modern environmental institution. A deep account of this direction will be offered in the thesis analysis chapters.

9.2.2.- Passive and Active De-Politicization as a Perspective of Analysis

The notion of depoliticization is the theoretical core of this section. In a previous effort was explored this notion connected with governmental discourse at the beginning of the environmental reform in Chile during the 90s (Campos-Medina y Larenas 2012). Through a discourse analysis of the presidential speech, which introduces the environmental law project to the parliamentary discussion, it is argued that the new ecological legal framework would prove insufficient to organize the socio-ecological conflict when the framework reduces social struggle to notions of *contamination control* and *rational extraction of resources*. The intention was to point out a pattern of continuity between the 80s, 90s and 2000s within the society-nature relation where the notion of *sustainability* would reinforce the predominant extractive orientation of the Chilean economy, not contain it.

This research reveals that the same actions and orientations advocated to create sustainability (in the mining and forestry industry) are responsible for exacerbating social conflict between different groups that inhabit the territories under dispute. It is possible to argue a similar situation exists for the case of energy production, which has become the central issue in the ecological arena for the last four to five years in Chile. The national energy policy is based on mega hydroelectric plants, which require more and new land to be flooded. This pressure for land cannot be disentangled from the movement to national energy autonomy. Sustainability, in this sense, will certainly reinforce socio-ecological conflict in a territorial pattern of hydroelectric expansion into remote areas of southern Chile.

This section sustains that depoliticization of the socio-ecological conflict, as discursive and material practices, could be described as performing two dimensions: a passive and an active. In short, the passive process of depoliticization means framing the notion of sustainability as solely thinkable in connection with the environmental management. This passive process excludes other and even more relevant socio-

ecological conflicts as thinkable at the local level. The active process of depoliticization is to consider illegitimate all claims that seek to expand environmental concerns out of the ecological arena. Especially germane is the socio-ecological conflict produced at the local level when new forms of economic enterprise settle in a new region.

The notion of a passive dimension is used to describe a more subtle exertion of power but under all circumstances one less effective. The intention here is to ascertain how a delimitation of what is thinkable in the ecological arena slowly defines procedures with enormous potential to reshape the environment, in other words, reshape the society-nature relationship. On the contrary, the notion of an active dimension is used to describe an explicit mode of power exertion by authority; in this case, the authority openly rejects, and thus illegitimates, the intention of social groups to broaden the socio-ecological conflict. Both processes act together in order to stabilize what is determined as a valid environmental problem at the national level. The passive dimension legitimizes the stabilization process of what is and what is not an environmental problem, while the active dimension excludes any competing forms for framing the socio-ecological conflict.

To further this argumentation, an important distinction between the passive and active dimensions of the depoliticization process should be added. The passive dimension appears to be concentrated strongly in the public policy arena and in a dialogue between parliaments and executive power. The active dimension is strongly based on the complementary correlation between the executive and the judicial power.

In concordance with this logic, the passive dimension is oriented to create concepts by which we socially refer to environmental problems. The social definitions implied in these concepts are based in legal instruments meant to regulate the environmental problem. The active dimension excludes competing forms for understanding the socio-ecological conflicts, in particular those that show the human and social consequences of the current model of economic development. In this process, civil society's efforts and claims regarding such activity has been rendered as illegitimate and even *criminal*.

The theoretical approach comprehends ecological depoliticization as three simultaneous and complementary movements to stabilize a specific society-nature relation in Chile between 1980 and 2010. These are; i) an extremely arbitrary delimitation of what is understood as an environmental problem reduced to the rational extraction of raw materials, the control of the pollution, and the production of energy with low level CO_2 emissions; ii) a constant reduction of public environmental debate where the social discussion and deliberation as well as any social agreement are gradually relegated by the primacy of environmental management; and iii) the active exclusion of all conflict that reveals a social struggle for discursive definitions of environmental problems; mainly connected with material intervention in fragile ecosystems under dispute.

It is possible to argue that the interaction of these three processes create a unity (or entity) between social definition of ecological problems and plausible solutions. The introduction of logic oriented *environmental management*[180] (Darier 1999, Robbins 2012) requires defining, discursively and materially, as the environmental crisis as something able to be solved by technical analysis. In other words, depoliticization advances the understanding of the ecological arena as modeled, formable, calculable, and possible to anticipate, and in the same process, excludes all problems that are irreducible to these four interpretative keys.

9.2.3.- Governmental Discourse as De-Politicization

One can recognize that environmental reform in Chile promoted during the 1990 is a reflection of the necessity to coordinate dispersed powers and to articulate a set of sectorial departments. When this situation, in the opinion of many evaluators, is responsible for a high degree of noncompliance with the environmental norm, the process of re-institutionalization cannot be detached from a concomitant form of depoliticization in national environmental policy.

It will be shown how in the presidential speech, which introduces the new environmental law in Chile in 1992, it is possible to observe a weak interpretation of

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[180] For a critical standpoint toward environmental management see the work of Bryant and Wilson (1998)

the social component inside the ecological crisis. This is illustrated in the reinterpretation of the constitutional right to live in a pollution free environment as an entitlement to a duty. In addition, two others strategies, here called the i) de-socialization of the socio-ecological conflict, and ii) the fallacy of an equal distribution of responsibilities and burden, will be explained.

In Chile, the Supreme Court was the responsible mediator of environmental conflict during the 1980s. Following Olivares (2010), it is possible to state that during this period the emerging ecological consciousness finds support in the Chilean "*recurso de protección*"[181]. By this means, many judicial cases were opened and decided in favor of citizen claims against pollution provoked by mining activity in the north and the forestry industry in the center-south of the country[182].

However, this constitutionalism meets its end with the approval of a new environmental normative in 1994. The presidential speech was explicit in suppressing citizen rights to demand environmental respect and simultaneously strengthened the extractive orientation of the country's economy. The following quotes show the deployment of this discursive strategy in the official discourse of the first president following the military regime.

"The challenge, that obliged us to save the planet from this degradation exposed by human activity, requires the understanding that environmental protection is not only a right of every person, but at the same time a "human obligation" that forces us to be aware and to emphasize the need for demanding more of us for the survival of human life itself. […] The issue here is not to increase the catalogue of rights that the man can demand under the Constitution and of the rest of the inhabitants of the planet."

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[181] "El recurso de protección" is a legal action enacted by the National Constitution Law and possible to be claim by every persons who due to action or omission, arbitrary and illegal, suffer from the privation, perturbation or endanger of his/her constitutional rights and guaranties. Based in the definition made in the Chilean Congress Library. Available in Internet http://www.bcn.cl/leyfacil/recurso/recurso-de-proteccion. Translation by the author.

[182] There are many emblematic cases of socio-ecological conflicts in Chile since 1980. To mention just a few: i) The construction of the hydroelectric plant Ralco in the Bío-Bío River and Mapuche territory, ii) The pollution provoked by CELCO cellulose plant and the death of the black neck swans, iii) The mining project of Pascua Lama in the Chilean-Argentinean border and the destruction of two Andes Mountains glacier, iv) Running desertification of the territory. See on-line book: "Casos Emblemáticos para la Institucionalidad Ambiental Chilena" from Teodoro Kausel (2006). Available in Internet http://www.expansiva.cl/media/en_foco/documentos/11102006103419.pdf. Translation by the author.

(Aylwin, 1992: 5)[183]

In the above quotation it is possible to track a very strong transformation to the constitutional right to live in a pollution free environment. This alteration unfolds byway of three discursive mechanisms; i) the revision of right as social obligation, ii) the description of the problem not as socially produced iii) the diminishment of juridical possibility to demand protection. Chilean environmental reform should be interpreted as a movement where the National Environmental Commission (CONAMA) assumes the role played by the Supreme Court during the 80s in overseeing the socio-ecological conflict. Nevertheless, and due to the administrative dependency of the CONAMA on executive power, environmental reform explicitly reduces the social value given to the ecological right in the constitution, and in parallel, reinforces a society-nature relationship based on privatization and commodification. These two orientations appear exactly in the presidential discourse of 1992, which should be considered a keystone of Chilean ecological modernization.

"Sustainable development must preserve the soil, the water, the genetic resources; it is environmentally non-degrading, technically appropriate, economically viable and socially acceptable. But simultaneously, conservation of the environment cannot appear in a restrictive sense. Our country needs to satisfy increasing need for housing, health, education, electric power, etc. It implies the use of resources that it owns. […] It seems that underdeveloped countries face the dilemma of growing and simultaneously preserving nature. However, this dilemma is more appearance than fact because with the adequate mechanisms it is possible to promote economic development and also protect the environment." (Aylwin, 1992: 6)

In this interpretation, the presidential speech not only reduces the category of ecological rights in Chile, moreover, it actively creates a pattern of continuity for the extractive orientation of the economy. The use of nature as resource is based on an overwhelming confidence in the technical capability to harmonize economic development and environmental care. This harmonization is far from possible because

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[183] All reference to official and presidential speeches analysed in the thesis, have been translated to the English by the author. Due to the informal character of the spoken language, there are no references in the thesis length to the original Spanish speeches.

the social and human consequences of the socio-ecological conflict are not solved by any economic-sustainable approach. As will be shown in the following, the social struggle continues to be present in the form of an active depoliticization of the environmental problem by excluding any need to socially agree and define the type of relation between society and nature.

9.2.4.- Mass Media Coverage as De-Politicization

After a first reading of media coverage regarding the socio-ecological conflict in Chile in the period 2011-2013, it is possible to distinguish at least three topics that congregate a group of relevant news: i) Mining activity from the perspective of sustainability; ii) Citizen demonstration against the energy policy in Chile; iii) the Mapuche land conflict from a perspective of violence. Each of these issues will be analyzed in order to describe how the socio-ecological conflict is portrayed.

Mining Activity's Search for Sustainability

From a historical perspective, mining activity has typically deployed a society nature relation charged with conflict. From the beginning of the industrial revolution references to coal extraction show a pervasive image of environmental pollution and poor working conditions. In the literature of the first half of the XX century, a devastating human condition and its imagery proliferate in every part of the world[184]. In the beginning of the new millennium, this representation seeks to be reversed and the improvement of working conditions and the security for workers has become a central issue, in a similar fashion has waste treatment and efficient use of water and energy. Nevertheless, it is still possible to observe labor precariousness in the most dynamic mining industries (Hughes 2013).

This process of increasing corporate social responsibility could be tracked through media coverage of mining activity in Chile. It is possible to state a set of interconnected strategies used together by the governmental and by the discourse of the mining industry, in order to render the present and future of activity as: i) Always in reference to the expansion of the sector beyond its social repercussions, ii) Consistently highlighting improvement in waste treatment, without referring to contamination issues, iii) Avoiding considerations of resource depletion as a real scenario; and iv) Never describing the scarcity of productive inputs as something provoked by industry.

The projection for the mining industry's expansion by 2020 is a discursive reality in

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[184] In Chilean literature the most important reference is perhaps the book "Subterra" from Baldomero Lillo, which portray the terrible living condition of the coal miner in the XIX and beginning of the XX century

terms of US dollar investment and copper extraction presented by almost every news report during 2012. It is conceivable to argue that this representation of the future is very powerful for reshaping the behaviors of social actors. The accelerated growth of mining activity in Chile by private investment (national and international) plays a central role in a complex rhetoric of national economic growth. The social and human consequences as a result of significant water and energy demand are not addressed by official discourse. Instead, the economic advantages for the communities in proximity to the mines, mines that are now considered as *contractors*, play a central role in the legitimacy of the industry (see e.g. Barrick project Pascualama).

A second strategy deployed by mining activity is to highlight the quality of their processes and improvements to security and sustainability while hiding the dramatic cases of pollution and danger to human health. Beginning in March and continuing until November 2011, the primary school "La Greda", located in the town of Puchincaví on the central coast of Chile, captured the attention of the mass media. On the 23rd of March 2011, a group of 300 students, teachers and parents were poisoned by sulphur emanating from the industrial park, located close to the city. Responsibility lies with "Fundición Ventana", belonging to CODELCO, as the mineral melting processes was emitting gases far over the international established norms. Furthermore, the emanations were even above the highly permissive national regulation, which astonishingly allows emissions four times higher than the international standard. The situation did not change substantially during all of 2011. There was another case of poisoning on the 27th of November, as a result of the company's failure to comply with a monitoring plan implemented on all industries in the sector. Remarkably, in the 2011 yearly report of the industry, published during the first month of 2012, the national mining society (SONAMI) did not mention this case and only remarked upon the novel intentions adopted by the industry to protect the environment.

The two discursive strategies considered in this revision are the omission of scarcity of resources as possible scenario and the role played by the mining industry in the process of depletion. These two notions are only distinguished in analytical terms, and why, for the following explanation, they will be addressed together. The comparative institutional advantage of Chile over other Latin-American economies to host big

mining enterprises is described in the official discourse as the basis for the great expansionism promised for the sector in the next ten years. In order to realize this future scenario, the mining industry must consolidate the subordination of all productive factors –e.g. land, water, energy and even work-, and also environmental policies.

Energy production should increase by every means in order to satisfy the industrial demand. In this context, as renewable energies adopted and implemented by mining activity is not enough to cover new demand, and because the deceleration of growth within the mining sector is not desirable, the supply must be satisfied by hydroelectric mega plants in the Chilean Patagonia or thermoelectric plants in the Atacama Desert. Nevertheless, the social movements opposition to these kinds of projects is manifested in every public survey and demonstration within the country.

"The mining industry is a large consumer of energy and in the next years their generation of new NCRE will not meet demand, which requires new projects be developed between now and 2020" [...] "therefore, and for now, the industry will continue to rely on an energy matrix in the SING, based primarily on the use of coal. This is notwithstanding the efforts of several mining companies to use NCRE supply in specific sectors of their operations." (El Mercurio Ediciones Especiales)[185].

It is possible to argue that the energy policy in Chile has been reshaped by the demands of industrial activity, especially by mining but also by other extractive industries. In this sense, the socio-ecological conflict provoked by mining activity is not only explicit in production processes, where the rational uses of resources and the control of pollution could be achieved, the conflict becomes explicit by influence of the mining industry on other production factors, like water rights, land property, and energy production. Here no improvement is foreseeable in the form of: i) State mining offices, ii) State production corporation, or iii) Private endeavors and companies. In the three cases aforementioned –land, water energy-, the industry stresses the political sphere, and so capturing or preventing democratic deliberation. In the case of energy production, as well as water demand, the mining industry's message is clear; they

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[185] El Mercurio, Ediciones Especiales. Available in Internet http://www.edicionesespeciales.elmercurio.com/_portada/index.asp

have invested in a sustainable production process by the incorporation of wind or solar power production and by the direct use or desalination of seawater. Because these improvements are not at a level to satisfy the industrial demand for resources, they will push for approval of traditional forms of water and energy supply. The mining industry legitimates their use of thermoelectric plants with a higher CO_2 emissions and water use far beyond a restrictive level that ensures availability for regional requirement and human consumption.

An initial conclusion of the analysis emerges at this moment: the searches for sustainability in the mining industry does not improve the quality of the democratic process for -commonly- deciding national environmental policies. These environmental policies, especially in the case of water, energy, land, and other goods –as could be labor-, are strongly influenced by the pressures exerted by the big industrial sectors. For this reason, to only analyse the effects produced directly by the mining industry on the environment has been proven insufficient. Instead, the need to engage a holistic approach to tackle the extended consequences of the extractive orientation of the Chilean economy is proposed. Only in this way does it become possible to understand the aggregated effects of all the productive sectors as motors of socio-ecological conflict.

Citizen Demonstration Against Energy Policy in Chile

The energy supply in Chile is one of the most contested environmental issues of the last three years. Riots against the approval of five mega hydroelectric plants in the Chilean Patagonia, and citizen opposition to thermoelectric plants (based in oil and coal) in the Atacama Desert were observed in every city of the country and corroborated by every public survey. Together, both are the so-called *re-emergence of the environmental issues*.

"A majority oppose the construction of 5 hydroelectric dams on the "Baker" and "Pascua" rivers, which are considered within the Hidroaysén project, state the people of the eleventh Chilean region, according to a survey conducted by the NGO Aysén Future. [The survey was] Applied in Puerto Aysén and Coyhaique on the 11th and 12th of May [2011] after the SEIA vote. According to the consultation, which was conducted through personal interviews, 60% of the Aysén's inhabitants are against

hydroelectric projects Enel-Endesa and Colbún, while only 31% approve and 9% do not know." (Radio Bío-Bío)[186].

In the case of energy production, citizen opposition to mega hydroelectric plants began to appear in the 1990s when ENDESA Chile[187] started the "Pangue" and "Ralco" projects in the Alto Bío-Bío area. In 1998 Hydroelectric plants were implemented in the Bío-Bío River, the historical frontier between the Spanish occupation and the resistance of the Mapuche population, the most relevant Pre-Columbian group in the south of the continent. This indigenous group occupies the center south of Chile and the same area beyond the Andes in Argentina. Particularly in the high mountains the Pehuenches (an ethnic variety of Mapuches) had conserved their original language and traditions without massive occidental intervention. Nowadays, the traditional lands of this population have been flooded to ensure energy supply to Chile; the people were relocated to new lands, and the cultural strength of their traditions weakened. In no case has energy been produced and supplied to the local communities in the surroundings, and therefore, plausibly improving their living conditions. Contrarily, the socio-environmental transformations are carried out to provide for the energy requirements of extractives processes taking place in different regions of the country.

"Chile should never give up the development of hydroelectric projects because of strategic reasons" "No one investment will be stopped for environmental considerations" "Nothing will stop the development of this country" (Frei, 1998)[188].

The quotation is an extract from the presidential speech of president Eduardo Frei

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[186] Original Spanish text: "Un mayoritario rechazo a la construcción de las 5 represas en los ríos Baker y Pascua que contempla el proyecto Hidroaysén, manifestaron los habitantes de la undécima región, según una encuesta realizada por la Fundación Aysén Futuro, aplicada en Puerto Aysén y Coyhaique los días 11 y 12 de mayo recién pasados tras la votación del SEIA. Según la consulta, que se realizó a través de entrevistas presenciales, el 60% de los aiseninos está en contra del proyecto hidroeléctrico de Enel-Endesa y Colbún, mientras que sólo el 31% lo aprueba y el 9% no sabe" Available in Internet http://www.biobiochile.cl/2011/05/14/encuesta-fundacion-aysen-futuro-muestra-mayoritario-rechazo-a-proyecto-hidroaysen.shtml. Translation by the author.

[187] ENDESA Chile is the largest electric utility company in Chile. It was created as a National State Company in 1943 and privatized only at the end of the military regime in 1989

[188] Frei, Eduardo. 1998. Discursos inauguración centrales hidroeléctricas Pangue y Ralco. Original text in Spanish: "Chile nunca debe renunciar al desarrollo de proyectos hidroeléctricos por razones estratégicas", "Ninguna inversión será detenida por consideraciones medioambientales", "nada detendrá el desarrollo de este país" Translation by the author.

during the inauguration of Central Ralco. He clearly states the subordination of nature and local communities to development requirements. What becomes most significant for the sociological analysis in the cases of "Pangue", "Ralco", and "Hidro-Aysén" are the characteristics of hydroelectric production in Chile, especially these: i) An intensive use of land required by hydroelectric production in terms of flooded valleys and the transformation of the river ecosystem under dams; and ii) A remote pattern of localization, increasingly located in the high Andes and in south Patagonia.

These two characteristics conjugated carry a set of socio-ecological consequences, where two are particularly negative: i) hydroelectric production signifies the eviction of a population from their historical lands, astonishingly, a population that has never experienced electric power in their homes before; ii) the hydroelectric production progressively affects territories beyond the initial and isolated location due to the need to *transport energy* from places of production to places of consumption. The so-called energy *"highways"*, which are the power lines constructed to transport the energy, are attracting increasing criticism from environmental protection groups. They are a source of socio-environmental damage not considered in the impact assessments applied to the original hydroelectric plants.

The territorial patterns displayed by hydroelectric energy production in Chile will be furthered in the following years in terms of increasingly remote locations and higher environmental costs for energy transportation. As a result, the national energy policy is consolidating regions with low energy demands but increased production in order to serve areas with low production potential and high demand. This should be accounted for as the principal characteristic of a national energy strategy that consolidates an *unequal distribution of territorial roles at the regional level*.

A criticism of the territorial pattern of hydroelectric energy production appears within a description made by a representative of the thermoelectric energy industry. The central argument of this, so to speak, concurrent energy, is that hydroelectric production: i) is highly territorial demanding in terms of flooded land, and is responsible for deep ecosystem transformation in the rivers beyond the dams, and ii) dislocates the relation between places of consumption and places of production. In this narrative, thermoelectric production appears better because it does not require

extensive land for production and could be located in proximity to areas of consumption. Nevertheless, when evaluating both sources of energy production, it is important to state that even though territorial patterns of production of the thermoelectric industry do not necessarily dislocate places of consumption and production, there is no guarantee of its unification. When thermoelectric energy production can be located elsewhere, the economic pressure to find cheaper land increases. Plants have been consistently located in poor municipalities of the north of Chile, and in no case in proximity to places of consumption. This situation can be seen as reinforcing an uneven distribution of territorial damages.

"Unlike any other energy source [thermoelectric] is the least invasive in terms of area, does not depend on natural factors, and can be installed very close to consumption centers. Therefore transmission systems are less affected." (La Tercera on-line)[189].

The social effect of this situation is a political form of deliberation where the national government decides an energy policy that, in fact, incrementally increases regional dependence and unevenly distributes socio-ecological privilege and damage. In this scenario the representative democracy as well as the environmental institution appears incapable of organizing the complexity of the socio-ecological problem. The depiction proposed by the mass media that the National Environmental Commission (CONAMA) and the Supreme Court deliberate a large portion of the Chilean GDP is a topic of discussion that deserves close attention. Thorough this discursive strategy mass media renders the socio-ecological conflict as a question of economic slowdown, gathering transversal opposition from society to the ecological-conservationist standpoint. From a sociological analysis, this narrative is changing the public's opinion of representation of the role played by the environmental institutions from regulating the socio-ecological conflict to emphasizing inappropriate influence over the economic activity.

In the same venue, the economic discourse renders the need to increase energy supply

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[189] Original text in Spanish: "A diferencia de cualquier otra fuente de energía, es la menos invasiva en cuanto a superficie, no depende de factores naturales y se puede instalar muy cerca de los centros de consumo. Por tanto, los sistemas de transmisión se afectan menos." Available in Internet http://diario.latercera.com/2012/03/04/01/contenido/negocios/27-102594-9-felipe-ceron-habria-un-traspaso-de-riqueza-de-los-usuarios-a-la-generacion.shtml

as a central component of the nation's capability to compete in international markets. The high price of energy in Chile is seen as an obstacle to future economic growth. This representation is also reinforced by performing an excessive demand in terms of domestic consumption. To strengthen this image, television advertising recurrently showed blackouts in the middle of football game played by the national team, or in the whole capital city as a result of somebody using a hairdryer. These situations subtly contribute in describing citizen demonstration in opposition to mega energy projects as irrational.

Energy supply responds not only to technical requirements but also to social principles. Seeking national energy autonomy as a principle should not disregard the notion of regional autonomy. When these two orientations coincide, it may be possible to contain an unequal distribution of roles over the national territory. In this scenario the way in which the energy would be obtained is highly relevant. Energy demand should be defined at a regional and/or local scale, independent from the current territorial patterns of energy articulation. Only in this way is it possible to observe how each and every region contributes to the principle of equal distribution of burden at the national level.

Big industry, especially mining and forestry (north and center south of the country) and the big metropolis in the center of the country (La Serena, Santiago, Valparaíso and Concepción), appear as the larger consumer of energy, and the areas with the smallest contribution to production. Social movement appears as the only way to restore social interest in an over-technified discussion, which is at the same time, is totally de-socialized from the unequal distribution of benefits and damages.

The Mapuche Land Conflict from the Perspective of Violence

One of the most complex socio-ecological conflicts in Chile is that between the Mapuche population and the Chilean National State. This conflict has roots in the Spanish conquest and colonization of the native population, and is highly recognized as being reinforced by the emergence of the National State in Latin America. In the case of Chile, the occupation of the southern area of the country is based on the usurpation of land historically belonging to the Mapuche population in the territories of Bío-Bío and Araucanía. The Chilean National State supported a colonial policy, in

the XIX and beginning of the XX century, by giving the Mapuche´s land to national and international colonizers.

The land becomes legitimate private property of persons, families and institutions over time and today the conflict is observed as a cultural clash between two rights that both seem to have a justification in their claims. The occidental ownership right and the ancestral right of use over the same land appear as a difficult struggle to solve. Until now private property has prominence and landowners utilize the *"rule of law"* in order to silence the Mapuche claim[190].

This scenario is the basis of the conflict but cannot explain its further development. Nowadays, the economic integration of Chile into the international market is expedited by the exportation of raw materials, especially minerals and forestry products. These industries advance territorial patterns of localization in spatial congruence with the ancestral settlements of the original population in the country, particularly the Atacama in the north and the Mapuche in the center-south.

"The conflict, though it is historical, has intensified in the last 20 or 30 years because the option of the Chilean State to be inserted into global markets has had tremendously adverse implications for indigenous peoples. Chile is inserted mainly through exporting natural resources, and there is a close correlation between the location of these natural resources, -mining, forestry, water-, and indigenous territories. So, to the extent that Chile continues its policy of expanding investment in view of its integration into global markets, it seems difficult to find a solution." (BBC Mundo)[191].

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[190] In Chile there is no constitutional and legal recognition of the different groups of native population. Mapuches as well as all the other ethnical groups are not consider a nation in a plurinational State, as is the case of other countries in Latin America. In Chile the political elites see this problem as integration into economic development. In this sense see the online article: "Reconocimientoy discriminación al pueblo Mapuche, Qué piensa la elite Chilena" (ICSO-UDP) Available in Internet http://www.icso.cl/noticias/reconocimiento-y-discriminacion-al-pueblo-mapuche-%C2%BFque-piensa-la-lite-chilena/

[191] "Chile / Mapuches: ¿Hay solución para el conflicto? Original text in Spanish: "El conflicto, si bien es histórico, ha recrudecido en los últimos 20 o 30 años porque la opción del Estado de Chile de insertarse en los mercados globales ha tenido implicancias tremendamente adversas para los pueblos indígenas. Chile se inserta fundamentalmente a través de la exportación de recursos naturales, y hay una correlación muy estrecha entre la ubicación de esos recursos naturales –mineros, forestales, hídricos- y los territorios indígenas. Entonces, en la medida en que Chile persista en su política de expansión de la inversión con miras a su inserción en los mercados globales, se ve difícil que pueda

The demand of the Mapuche population to recover the land and to develop an autonomous political government inside the Chilean State will always clash with the interests of the large forestry industry and agricultural companies. Economic actors find major institutional stability in maintaining the *status quo* in the region, in terms of government regime and the property of land, and so would never support new forms of ruling for the Araucania Region. The possibility of creating a real, multi-cultural State in Chile, with major levels of autonomy for the indigenous minorities, is in contradiction with the economic and political powers that promote a strong National State.

In recent years and even in the few last months the violence has increased in the Mapuche territory. However, this situation cannot be detached from the way in which the Chilean National State has dealt with the socio-ethnic, socio-ecologic and socio-politic dimension of this conflict. Since the period known as *democracy return* in Chile, the way in which this conflict has been handled could be represented as a criminalization of the Mapuche population and their claims. A central aspect of this policy has been the enforcement of the *"Internal State Security Law"* (also known anti-terrorism law) in the form of an anti-terrorism measure over Mapuche protesters. The conflict suffers from an escalation of violence in the form of burning farm, road ambushes, and shootings, to mention some of the relevant disturbances[192].

The *internal security law* means to consider the Mapuche protester and their leaders as terrorists against the Chilean National State, a condition rarely applied in Chile. It is possible to question this procedure given the extremely negative results observed for the society as a whole: i) An important number of policeman and protested injured or killed in the region, and ii) Approximately a dozen Mapuches considered as political prisoners and deprived of liberty. The legitimacy of the Mapuche demand

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haber una solución." Available in Internet http://www.bbc.co.uk/mundo/noticias/ 2011/01/110110_dia1_mapuches_solucion_conflicto_vp.shtml Translation by the author.

[192] Dasten Julian, in the abstract of his article "La Huelga de Hambre Mapuche, Una Mirada crítica a los síntomas del Estado Chileno" (Unpublished) states: 34 Mapuches, imprisoned in different jails of Chile, held a hunger strike, from July to October 2010. These had been judged and classified by the State as "terrorists" being processed with the application of anti-terrorism law, formulated in the regime of the (last) military dictatorship in Chile. The following is an analysis that addresses the main fissures of a political exercise of violence, its direction, intent and rigor to the Mapuche people, as a paradox of the practice and discursive construction of a "democratic scenario," which we explain as part of the social symptom of the State, in the form of a subversion with / in its own existence, power and ideological claim and failure of legitimacy and universality.

appears to be weakened in the face of public opinion as a result of the violence in the Araucanía region during the last ten years. Recognition of the claim for land and autonomy is not considered as relevant as the maintenance of order. The shadow of violence in this conflict is also an element, which should be considered an obstacle to open dialogue, and a disturbance to finding channels of resolution.

A central element in the conflict is the territorial coincidence of the Mapuche people and the forestry industry. The Bío-Bío and the Araucanía forests are under dispute by two contradictory visions of the society-nature relation: one understands nature as sacred and the other considers nature a material resource. This territorial coincidence should be rendered as a dynamic process because the seeking for sustainability by forestry activity requires extra land for further plantation in a very intensive pattern of territorial expansionism. In this scenario, it is possible to speculate that the demand for land exerted by the industry will extend pressure to existing forest in the region, including the traditional lands occupied by the Mapuche population. Depopulation of the region, and the renting of land by indigenous people to the forestry industry, are situations already present. Even when of 40% of this territory is already occupied by the big forestry industry today[193], the intention within the sector is to compete with copper mining in GDP participation. This situation becomes only possible by a scaled territorial expansion never seen before in Chile or in Latin America as a whole. As a result, only intensification of the socio-ecological conflict is to be expectable.

9.2.5.- Some Reflections on the Nature of Socio-ecological Conflict in Chile

The discursive construction of the environmental crisis in Chile as a problem of pollution management and rational use of natural resources is not only a question of these two characteristics becoming prevalent in the public debate. It is sustained that this is an active exclusion of alternative renderings of the socio-ecological conflict in the national territory.

Governmental discourse explicitly enforces the right to live in a pollution free environment, no longer a right, but contrarily, as duty. In the same movement, it avoids any judicial claims to ensure its respect. On another level, the same official

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[193] See map forest industry in this chapter

speech intends to reinforce the extractive orientation of the Chilean economy as the only way to ensure economic development. This section has proposed an understanding of these two discursive strategies as the passive process of depoliticization. Because they both focus on a particular dimension of the socio-environmental conflict but do not necessarily exclude other possibilities for rendering the ecological crisis.

In a second step, described as mass media coverage, three sets of news were analyzed in order to exemplify an active process of depoliticization in relation to the cases of: i) mining industry, ii) national energy policy, and iii) the Mapuche conflict for land and autonomy. This meant to highlight a dynamic operation of media coverage and governmental discourse that de-legitimizes the social claim contra territorial, social, and human consequences of the Chilean model of development.

In the case of the mining industry, their excessive pressure for water and energy supplies exceeds their capability to transform their modes of production in the long run. The effort by the industry to produce green energy or to use seawater becomes a discursive dispositive to legitimate the increasing use of thermoelectric plants with dangerous levels of CO_2 emission and the growing demand for fresh water required for production processes at the expense of human consumption and agriculture. The industry does not confront two important facts presented in their strategy for sustainability: i) use of seawater will increase the demand for energy in the desalinization process and this energy, produced either by thermoelectric stations and only partially by solar panels, will transform a vast area of territory in the Atacama Desert; ii) the water resources captured by the mines are fossil reserves, meaning, they are not renewable and so are under risk of disappearance as reservoirs in the most arid desert of the words.

Nowadays, established mining projects and future ones attempt to redirect water for the scarce watershed in Atacama Desert. In this territorial context, any, even minimal, reorganization of the limited supply means a reduction in availability for major seaside cities and for the Atacameños' settlements in the Chilean Altiplano. This situation will reinforce socio-ecological conflicts because the pressures are essentially over scarce resources, which are constantly under dispute. This argument posits that

the mining industry's search for sustainability, especially when the industry is seeking incessantly for expansion, cannot solve the socio-ecological conflict for water and energy. The main obstacle for civil society will be to render conflicts in terms of the territorial, human and social consequences of industrial expansionism and to overcome the well-established economic and technical narratives of the most important economic activity in the country.

In the case of energy production, the intention to achieve national autonomy is not accompanied by a similar principle in regional terms. The urban as well as industrial pressure for energy is territorially localized in regions with high demand and low production. This unequal distribution of regional roles is at the very basis of a disproportionate distribution of damages and benefits to the territory. In this scenario, a communicative strategy has been reinforced in recent years to distract from the importance of the social movement advocating the promotion of green energy production and conservation of ecosystem in zones where mega projects are expected to settle.

Energy production, and every project that wishes to intervene in the territory, is evaluated for environmental impact in a singular fashion, meaning, that the cumulative impacts of different phases of the same project are not considered[194]. In the case of Hidro-Aysén, the project was evaluated for impact produced by the dams and was separated from the impact of power lines to transmit the energy to the centers of consumption. This division is far from being irrelevant in the evaluation of impact produced by megaprojects. The national strategy that increasingly produces energy in remote areas should consider the transmission process not only as side effects but also as a substantive condition of these kinds of enterprises. In this scenario the discursive strategy has been to show opposition to the construction of a hydroelectric station in the Chilean Patagonia as completely irrational. Television advertising showed unpredictable blackouts in the metropolis as an unavoidable consequence of the opposition to this particular project reinforce the image of irrationality. Nowadays, the discursive dispositive is changing and remarks instead the declining economic advantage of Chile as a result of high-energy prices. In this narrative, Chile's

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[194] To change this regulation has been matter of debate in the last years. First in the new Environmental Minister as well as in the last Presidential campaign for the election in 2013

capability to compete in the international market relies on the ability to develop an energy policy that reduces the cost of production bereft of human, social and territorial inequality in its wake.

In the case of the Mapuche land conflict in the center south of Chile, the main thesis shows that the search for sustainability by the forestry industry will constantly apply pressure for land in the areas in conflict. The environmental institutions in place today cannot solve this situation. Important steps have been made under Convention N°169 by the International Labor Organization over indigenous and tribal people, restricting any new project affecting the living conditions of indigenous population without their consent. Nevertheless, the discursive strategy and the judicial mechanism applied to the Mapuche claim have resulted in their criminalization as a terrorist group against the National State. No recognition has been given to the fact that the productive orientation adopted in the territories under dispute has consolidated a process of constant eviction.

In none of the aforementioned cases is it possible to anticipate a solution to the environmental conflict. Elements to consider in future research are i) the consequential de-socialization of environmental institutional transformation; ii) the de-politicization of the decision making process of environmental policy, iii) the way in which the same search for sustainability impacts socio-ecological conflict, iv) the integrated or systemic fashion in which the extractive and energy projects are interrelated in creating social and environmental damage and v) discursive strategies as passive and active processes for framing environmental problems.

For this last case, the paper sought to explore the way in which official speech excludes dissident interpretation of the socio-ecological conflict by defining the claims of the social movements as irrational or even criminal. In this interpretation, the economic sector is performed as an active actor pursuing development by green strategies, and contrarily, the social movements are represented as irrational activists involved in street riots and violent demonstrations.

From the academic point of view, the socio-ecological conflict becomes a relevant field for promoting deep change in the society-nature relationship and for

reorganizing the notion of development beyond the commodification of nature. Within this process, a first step should be made to legitimate the claims of the civil society and social movements as relevant actors in a discussion monopolized until now by so-called environmental experts.

9.3.- Chapter Nine Summary; Ecological Modernization in Chile and the Intensification of Extractive Industries

This chapter has analyzed in depth the Chilean context of ecological modernization. The challenge for this account has been to find a balance between describing singular, historical facts and deriving major social trends, experienced by the country since the end of the 80s. The argument demonstrates that the modernization of the national environmental institution upholds an intensification of the commodification of nature by changing the form of society-nature relationship in the country.

The main feature of the Chilean experience toward environment during the last two decades has been the articulation of the economic, political, and social sphere around a major trend to economic development. In the context of democratic return and an over confidence in parliamentary deliberation, in contrast to the common belief, made the justification for a continuous process of de-politicization of every type of public policy. The environmental regulation is not an exception in this trend.

Recovering democracy, the beginning of ecological modernization, and major expansion of the extractive industries are three processes that coincide in time. Chapter nine gathers an important amount of evidence to support this statement and to prove it's plausibility. In this light, the historical process spatio-temporal restructuration bears can be examined. The discourse surrounding and narrative regarding ecological modernization portray a very specific articulation of time and space, one oriented to environmental protection or nature's exploitation.

The historical analysis points to the need for deepening research on the spatio-temporal frameworks, which discursively and practically, accompany every modernization process. The exponential increase in the exploitation of the ecosystem and nature, as seen all around the world, is not rendered by an explicit discourse of

nature subjugation-domestication. Quite the reverse, the major misuses and exploitation of nature run silently inside a narrative of ecological care. In this context the question remains: how can an accurate account of the tendency toward nature's commodification be provided inside a narrative that harmonizes ecological development and environmental care? The answer, as will be presented in the next chapters, is to use discursive and narrative approaches as analytical entries to spatio-temporal restructuration in environmental issues.

Chapter Ten: Empirical Research II
Chilean Ecological Modernization From The Actor's Perspective:
A First Approach to Spatio-Temporal Restructuration

Chapter Overview

This chapter offers a framework for analyzing social discourses regarding modernization of the environmental institution on the basis of the notion of socio-ecological conflict. The re-emergence of this type of conflict in the last years in Chile evidences a conflictive way of understanding and an adverse form for rendering the so-called ecological crisis. Reconstructing the positions of different actors in the field of environmental politics is expected to emphasize: i) different interpretations of ecological modernization, ii) (derived from the previous) selective orientations for action regulation in each group, and iii) specific spatio-temporal frameworks for constraining / allowing social action.

The narrative approach to socio-ecological conflict, considered as part of a debatable representation of the society-nature relationship, does not limit the struggle to the discursive dimension. The approach to social actors and their experiences introduces an account of the extended consequences of change in environmental policy. The political actors are approached in their understanding of ecological modernization as institutional improvement. Academic actors reset the tensions between the regulation and the intensification of socio-ecological conflict. The civil society and local authorities stress ecological modernization as an engine for nature's subjugation and commodification, while the local community sheds light on the social conflict provoked by exponential growth of the extractive industries.

The chapter argues that the way in which ecological modernization is rendered, as a final stage of institutional improvement, obscures controversial reorganization of actions and roles taking place in the environmental scene. The central argument proposes that the clash between different organizations of time and space among social groups offers a good perspective to account for the socio-ecological conflict. A spatio-temporal restructuration analysis asks which interpretations, actions, and dispositives are produced by specific spatio-temporal regimes, rather than to deem them as stable or given before hand.

10.1.- The Narrative Approach as a Methodological Tool for Describing Spatio-Temporal Restructuration

As was presented in chapter eight, on the theoretical bases of the empirical analysis, social narratives are connected with time and space in at least two ways: i) narratives are spatio-temporally articulated, and ii) narratives are able to articulate spatio-temporal regimes and arrangements. In the first case, narratives are organized in a succession of events and between places. Past, present, and future are implied inside the story in the same way that closeness and remoteness are presented. In the second case, stories make an explicit focus on time and space, and they show how both categories are organized i.e. maintained or transformed. In the cases of narrative as articulated or articulating time and space, stories express something happening. The normal flow of event has or will be changed with bases in logic that structure speech. If we consider together the three aforementioned elements of the narrative: i) space-time organization, ii) capability to reorganize time and space, and iii) logical organization, then we may approach what in narratives studies has been called the normal order of significance (Bernasconi 2011a).

From an intuitive approach, narratives appear spontaneously as spatio-temporally located and with a logic of plausibility. In other words, the listener is capable to distinguish some degree of truthfulness of events and to recognize the setting in which events happen in the story. Setting and truthfulness are in different ways connected, being an special way to connect both concepts the notion reliability because, many times, what makes unbelievable a story are inaccuracies in the spatio-temporal setting. Nevertheless, the social narratives are not merely settled in time and space or just truth or false. Stories and narratives are not condemned to make a description of reality they could also construct it. In this sense, there are two ways in which narratives re-structure time and space: i) they make an explicit theme in the notion of time and space, ii) due to its historical organization; they show processes of expansion or contraction in the spatio-temporal frameworks.

When someone offers a story about how fast or slow s/he travels, or simply recounts her/his perception about a travel as very fast and comfortable or slow and uneasy, time and space become explicit themes of speech. Historical accounts that show transformation in forms of communication between different regions are a very

simple and explicit way to reference spatio-temporal structures. These narratives regularly describe improvement to transportation systems, for example, by referencing past organization of time and space. On the other hand, and from the level of agency, social narratives reinterpret, for instance, personal history. In this context spatio-temporal references could be expanded or contracted. This is the perspective offered by Bernasconi in her studies of moral narrative elasticity when she proposes contraction and stretching as form of personal experience. For example, a temporal contraction is observed when people refer to themselves as "we do things the old way" or "this is no longer a world I can identify with" (Bernasconi 2011a: 25). The focus of the Chilean sociologist is the moral experience and its negotiation during the lifetime, especially in the context of cultural transformation. In the words of the author:

"The present article introduces narrative elasticity (NE) both as a feature of narrative work and as a time-sensitive analytic tool for examining the negotiation of personal experience when the cultural references that propelled and nested people's self-conceptions suffer transformations in a given society." (Bernasconi 2011a: 21)

Narrative elasticity is an approach for observing the negotiation of the personal experience with the constant construction of individuality. Personal experience is not just structured inside a stable organization of the self. On the contrary, the self is in process of construction, and experience may alter it. Special attention gathers the negotiation between individual experience and the self in the context of cultural transformation, meaning when moral references are dynamic and not stable. In these conditions the methodological perspective should be sensible about time frameworks by catching the diachronic character of people's experience.

The approach to the process of ecological modernization in Chile from the actors' perspective seeks to reconstruct different positions in the environmental field. With grounding in the proposal of Bernasconi (2011a, 2011b), three elements are considered in the analysis: i) changes in the cultural context, ii) negotiation of actor experience, and iii) process of spatio-temporal contraction-expansion. Bernasconi's approach is used as a base and is also adapted; some difference and commonalities are expressed in the following.

For the Chilean sociologist the analysis is not over social actors but individuals. The negotiation between experience and the self appears along a lifetime and is not a negotiation between different actors in a particular social field. Temporal expansion or contraction appears for individuals when they are able to incorporate or exclude experiences and interpretation in their moral construction of the self due to changes in the cultural frameworks. Therefore, there is no spatio-temporal expansion and retraction as an overall construction of spatio-temporal regimes and arrangements. On the other hand, for the analysis of spatio-temporal re-structuration as consequence of the modernization of the environmental institution, is possible to state the following: social actors are negotiating interpretation about the society-nature relationship along time. The cultural context that organizes different stances toward nature is changing and dynamic. Spatio-temporal expansion and retraction appear as part of the narrative about nature and allow or restrict the social process, in particular, action oriented to nature's commodification.

10.2.- Method of Analysis

Between 2012 and 2014 a set of twenty-six interviews in the cities of Santiago and Antofagasta were conducted. It considers equal numbers of interviewees in each city and asks sixteen males and ten females. High-level politicians, policy makers, university academics, local authorities, civil society NGO, and local communities were addressed with the intention to reconstruct the social discourses surrounding the ecological modernization in the country. High-level politicians are related with the parliamentarian deliberation of the Chilean environmental laws. Policy makers are work professionally for the environmental institution directly or in the environmental departments of other State offices. University academics are scholars researching environmental issues and are connected with the environmental institution by professional experience. Civil society is approached by interviews with the coordinator of the principal environmental NGO of the county. And local community is addressed in connection with the socio-ecological conflict produced by the mining industry in the Atacama Desert. The interviewed group considers lawyers, geographers, sociologist, economist, agronomist, biologist, psychologist, contract workers, and native population. The variety of interviews seeks to recompose the

diversity of positions in the socio-environmental field. Representativeness it is not expected in every social group approached, on the contrary, the intention is to grasp reliability in the construction of the large picture of socio-environmental issues.

In this research, it is proposed that ecological modernization can be effectively studied through social narratives. Actors' narratives reconstruct different positions in the environmental field and particular roles in the emergent form of society-nature relationship. As was mentioned in previous chapters the concept of "ecological modernization" is used to point out the transformation in the environmental institution in the direction of rational management. Rational management refers to the social intent to harmonize environmental protection and economic growth. Ecological modernization as a specific form of society-nature relationship requires: i) a different representation and definition of nature and its components, ii) a particular understanding of environmental ecosystems in relation to other policy instruments available, iii) a novel dispositive to measure environmental impacts and compensation of damages, and iii) new mechanisms to allow and/or constrain different forms of action over ecosystems. This characteristic, instead of conceptualizing the modernization process as a set of actions toward institutional improvement, performs the process as an ambivalent one organized in terms of actors' value judgments. In some way, this conceptualization adds the idea of uncertainty to the classical conceptualization of the modernization project as "propelled by the idea that human beings as citizens should themselves and collectively determine their own fate by shaping society independently of the demands of tradition, custom or even nature." (Rosa 2005b: 5)[195]

Modernization appears connected to discursive practices of social self-description in which past, present, and future are organized. The present situation is not confronted to an objective past or to a foreseeable future, both dimension are constantly reinterpreted in order to make sense of the present. Following Bernasconi's reading of Koselleck (1983) "our way of understanding the past has consequences for interpreting that past itself and for its relation with the present and future. The

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[195] Here Hartmut Rosa references the works of Reinhart Koselleck, Future Past. On the Semantics of Historical Time (1985); Jürgen Habermas, The Philosophical Discourse of Modernity (1987b); and Talcott Parsons, The System of Modern Societies (1971).

categories we use to make temporal dimensions "conceivable" are inseparable from our interpretation of those temporalities" (Bernasconi 2011a: 22). With the intention to expand the temporal argument to the spatial dimension is possible to state the following: The categories used to conceive time and space are constitutive of the social interpretation of the spatio-temporal structures.

A narrative approach will be used in the following to analyze actors perspectives at two discursive levels: i) the socio-ecological conflict -or its absence- emerging from the type of society-nature relationship performed by the modernization process, and ii) the spatio-temporal structuration of the society-nature relationship required by the different actions deployed in the context of ecological modernization.

10.3.- Spatio-Temporal Narrative of Different Social Actors

The people interviewed during the research represent a wide variability in their standpoint toward nature. They observe that one position is not generally accepted in the environmental field. The interviewees are able to recognize different orientations, problems, and challenges across social groups. This does not mean a position of spectatorship in the environmental field. On the contrary, social actors are active in order to propose specific spatio-temporal arrangements that favor their disposition, orientation, and action toward nature. Expression as "the exploitation of natural resources accelerates", "there is a very restrictive account of ecosystems", and "there has been a very long time-span of profitability" are all narrative that exemplify the dynamic character of spatio-temporal structures in actors' narratives.

There is no one-directional spatio-temporal narration connected to increasing nature's commodification. Spatio-temporal expansion appears as an accurate way to represent socio-ecological conflict, but at the same time, it has been used in the narrative accounts that seek to disperse responsibility. The global scale, as a wide geography and long lasting temporality, is presented discursively as the main characteristic of the ecological crisis. Therefore the socio-politic response to that crisis should replay the same spatio-temporal structure. This situation will be studied deeper in chapter eleven through discourse analysis of the environmental law in Chile. Spatio-temporal retraction is presented as the political way to incorporate the singular ecosystem in the

analysis. Nevertheless, this discursive process represents the loss of the systemic character of ecosystem and its required regional references. The action allowed by retracted narratives about environment does not account for the regional impact of different productive projects. This condition of the Chilean ecological modernization was explained extensively in chapter nine. In both cases what appears is a spatio-temporal dislocation in social narratives that selectively allows and constrains social action.

10.3.1.- Enlarged Spatio-Temporalities for Framing Environmental Issues and Socio-Ecological Conflict

As was mentioned in previous chapters, the main argument proposes that the first wave of ecological modernization in Chile organizes time and space in order to gain the spatio-temporality of the regeneration of nature as a legitimized "place" for industrial production. The ecological restrictions to economic growth were reduced and pushed forward with the intention-increase the extractive process. This situation is only conceivable by the discursive stabilization of a representation of nature that is compatible with the growing of extractive industries. The stabilization occurs at three different levels: i) a particular representation of nature, ii) the implementation of discursive dispositives that combine representation and actions, and iii) the enactment of practical mechanisms that assume these representations. These three levels will be addressed in the next chapter that advocates a discourse analysis of the environmental legal framework. The current section will concentrate on the first level of analysis highlighting the predominant spatio-temporality of the environmental law. Questions for this section are: which temporality appears as the one organizing the prevalent stands toward nature, and which spatiality frames the actions defined as possible over the environment. Both questions are asked with the intention to shed light on the spatio-temporal condition of socio-ecological conflict.

The analysis shows a narrative structure that uses long temporalities and wide spatialities to frame the understanding of nature in the first wave of ecological modernization. During the second wave of modernization, a very reduced scale was considered for the environmental impact assessment. This situation appears by eluding to assess the regional effects of the extractive industry's expansion. Focusing

again on long temporalities and wide spatialities, it becomes possible to state that both spans, time span and territorial extension, are very stable for measuring environmental problems. In other words, enlarged ecosystems are more resilient than the very local ones. Therefore, enlarged and expanded territorialities were the discursive orientations required by extractive industries during the first wave of ecological modernization. Under the imperative of growth the intention to expand economic activity was only possible by means of a novel spatio-temporal representation.

Following, two extracts from the interviews with University Academics are analyzed[196]. The first comes from an interview made in Santiago in 2012 with one of the most renowned scholars in the discipline of Geography. He was connected to the transformation in the environmental institutions from its very beginning in the 1980s. Nowadays the academic is titular professor of Geography in the biggest University in Chile and leads a variety of research in environmental issues.

Narrative analysis table 1		
1	University Academic (Santiago)	We never had the accumulation of mining projects that appear in the 90s
2		This is the decade in which the "big mining cluster" is produced in the Antofagasta Region
3		At the end of the 90s, this situation explodes and it is expanded to the regions of Tarapacá and Atacama.
4		And nowadays it is even in the Arica and Parinacota regions at the border with Peru.
5		What we see is that the ninety thousand millions of US dollar investment leaves no one indifferent,
6		It leaves no portion of territory indifferent

To have in idea of the extension of the mining cluster proposed by the academic, the distance described in different Chilean regions is comparable to that between Hamburg and Rome in Europe. In the north of Chile, the mining industry's growth, under the first wave of ecological modernization, appears in three different forms: (Table 1: 1-4) i) the consolidation of the high level of production in the traditional areas of extraction, the Antofagasta region during the 90s, ii) the expansion to the neighboring region at the end of the 90s, and iii) the expansion to the bordering

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[196] The extracts are organized in tables showing a very small part of the interview conducted. The speech of the interviewee has been divided in phrases organized by a correlative number. In doing so, it is expected to facilitate reference to extracts in the analysis, enabling the reader to go back to the direct statement of the interviewees. The extracts are only presented in English language, and the author has made all the translation.

regions with Peru. The academic associates the territorial growth of the mining industry with the demands of the economic investment rather than with a project of social development. The idea that no territory stays indifferent to the huge amount of capital investment expresses the driving motor for the territorial restructuration produced in the last decades.

The second extract comes from an interview made in the city of Antofagasta in 2012 with an economist expert in regional planning. He is an expert in the industrial and territorial dimensions of the mining industry. Nevertheless, the following extract is presented as evidence of the temporal restructuration proposed by the extractive industry.

Narrative analysis table 2		
1	University Academic (Antofagasta)	There has been a very long time span for profitability in the mining activity, if we think that during the next 12 years the price of copper remains like this [then we have almost five decades of very favorable conditions]
2		The price is unbelievable! You should think that twenty years ago the mines worked with 80-90 cents of a dollar for a pound of copper. And that was wonderful!
3		Ten years ago (2000), one dollar was unbelievable
4		Now you have a price over 3 dollars. That is crazy!
5		When you see the revenues of Escondida or CODELCO we are talking about thousands of millions of dollars.
6		It is something from another planet.

Price transformation of copper is very clearly expressed in the interview (Table 2: 1-4). The increase in international mineral prices shows growth of more than three hundred percent in the last decade. The academic affirms that in the 1990s a lower price was considered wonderful by investors. With reference to the temporal dimension, this situation of favorable economic conditions shows a very long time span and stable character. The investment's conditions as well as the economic revenues are considered in the interview as something 'out of order'. In practical terms, the change in spatio-temporal dimension of the extractive industries, for both interviewees, is possible by the extraordinary wave of investment. That no territory can counteract this movement toward the commodification of nature would be a good way to summarize both extracts. From the perspective of the local community, the spatio-temporal transformation experienced as a result of the extractive industries does have repercussions.

The spatio-temporal transformation in the extractive industry has been possible by a new representation of nature in the public policy sphere, as will be shown in the next chapter. But at the same time, the consequences of industrial growth have been mediated or regulated by policy action. The following extract shows how the policy incorporates the idea of "gradualness" as a form to deal with the emerging socio-ecological conflicts. The interview was conducted in Santiago in 2012. The interviewee is one of the most renowned scholars in Environmental Issues in Latin America. He was part of the Economic Commission for Latin America and the Caribbean (ECLAC) in its environmental division and was in charge of the national environmental reports for Chile through the last decade. Currently he is head of a center of public analysis in the largest University in Chile.

Narrative analysis table 3		
1	University Academic (Santiago)	The so-called gradualness is very much applied in Latin America, but it is a trap, a very sinister trap, because what means gradual?
2		In a range of one to one thousand, if I apply an increase in one, it is already gradual, as well, it is gradual, if I apply five or ten.
3		The gradualism is the trap that avoids taking into consideration the ecological passives.
4		In other words, the past "came as negotiated", otherwise the law will not "come out"

"It comes negotiated" means that some decisions in the environmental law were decided in advance and they were not part of the parliamentary deliberation. The idea that the law may not "come out" expresses that the required parliamentary support for the law would not be achieved without excluding some aspects from the discussion (Table 3: 4). When the interviewee was asked about the role of "gradualness" in the law 19.300 / 1994, he very explicitly describes the shortcoming of this notion. In his perspective gradualness is triggered not by ecosystem requirements but by the intention to avoid consideration of the environmental passives. The passives are the non-treated waste of industrial processes, and they were a very relevant social concern during the 1990s. Nevertheless, managing environmental passives means the extractive industries should redirect resources and time from the productive process. In this context, "gradualness" as a concept is very much unclear because does not render socio-ecological conflict in a specific spatio-temporality for tackling problems at the local scale. At present the gradual extraction could mean different temporalities (Table 3: 1-3). An extended temporality is required by the extractive industries to

continue expansion and slowly incorporate major and stricter environmental standards.

Local community observes with resignation the extended temporality of the extractive industries. They are affected in a daily manner by the productive process and not only in the form of contamination but also in the restricted availability of resources, as is the case with water, land, and energy. The following extract shows part of an interview conducted in the Atacama Desert in the town of Chiu-Chiu during 2012 with the president of the neighborhood committee. The town in located in the middle of the Chilean Altiplano and close to the largest river of Chile, the Loa. Two big copper mines are located nearby the town of "El Abra", which was founded by private capital and "Radomiro Tomic" from the CODELCO.

Narrative analysis table 4		
1	Interviewer	But here there are serious problems with the water, right?
2	Local Community Atacama Desert	Yes, we are trying to recover the water
3		But this will happen only in ten years more
4		Perhaps,
5		Only now the mines are becoming aware of the very bad use of the water
6		In fact, Radomiro Tomic, one of the mines, has a project to take water from the sea
7		The problem for the project is that it requires a very big investment […]
8		In fact, we still have some water here,
9		Instead the First Region, in ten years more, will not have fossil water any longer.
10		Here the flowing water as well as the underground aquifers give us some water
11		But, in any case, there are explorations for water in many sectors
12		As is possible to see, new mines have been installed,
13		And this makes the water wells go dry

In the context of the interview, the president of the neighborhood committee of Chiu-Chiu was asked about the water problems. He answers with a time frame that calls for attention. He states his willingness to recover water or obtain more water supplies for the community and agriculture activity. However, he explains that this will not happened within the next ten years, perhaps longer (Table 4: 1-2). In the perspective of the local population, companies have ensured, legally, the water rights and there are not many possible actions. The situation for that community is difficult but not critical, there are still water supplies. Nevertheless, the increasing number of mines

installing in the area are drying the water wells (Table 4: 8-13). This calls attention to the temporal framing of the socio-ecological conflict for water in the Atacama Desert. The long temporality appears as a factual reality for the local community beyond their daily needs.

During the last years of the 1990s socio-ecological conflict seems to re-emerge. Interestingly, the endorsement of first national environmental law in Chile is not running in parallel with the enactment of its rules of procedures. In other words, there is an interlude of several years between the law and its regulation in which no legal procedures were factually implemented. This institutional problem creates a sort of spatio-temporal deregulation for environmental issues that has two interconnected consequences: the expansion of the extractive industries and the re-emergence of socio-ecological conflict. In the following an excerpt of the interview conducted with the director of the first environmental NGO in Chile is reproduced. The discussion engages spatio-temporal deregulation and the orientation toward economic development, without any environmental consideration during the second presidential period after the military regime.

Narrative analysis table 5		
1	Civil Society Environmental NGO (Santiago)	When Eduardo Frei becomes president, with a "hydraulic and developmental" spirit, clearly the things change.
2		In fact the Law Environmental Bases is from 1994 and the rules of procedure are from 1997.
3		There are three years of difference
4		And I think, it is because Frei was slightly forced to implement this regulation […]
5		One of the illustrative episodes in the government of Frei was when he went to Ralco (Hydroelectric plant in the Bío-Bío River and Mapuche`s land) and said: "The development will not be stopped by environmental consideration"
6		This is part of the Frei's doctrine. I would say, that the whole government of Frei was a period for the re-emergence of environmental conflicts.
7		You have: Ralco, Gas Andes, Mahuilco in CELCO cellulose plant.
8		There are many emblematic environmental conflicts that appear there.

Discussing changes in the governmental attitude toward nature, the interviewee is very explicit. "Things changed" during Frei's presidential period and they become noticeably oriented by the search for economic development. In the Spanish language the world "developmental" (desarrollista) means a misrepresentation of the real orientation of development. A type of development which endangers its own meaning and produces more damages than improvements (Table 5: 1).

The explanation of the change in the orientation of nature from protection to commodification not only occurs as transformation of the social actions deployed. In contrast, the interlude between the endorsement of the environmental law and the enactment of its regulation is a central element. The enactment of the regulation to apply the environmental Law of 1994 occurs because the president was forced to do it (Table 5: 1). These two conditions together, change in the orientation for action toward nature and the late enactment of the regulation, are at the base of the re-emergence of socio-ecological conflict at the end of 1990s. The narrative about the second presidential period after the military regimes explicitly revels how discourses and actions are mutually articulated in order to organize the society-nature relationship.

Socio-ecological conflicts are not only caused because a President states no investment will be inhibited by ecological concerns. The interview highlights that this orientation is only possible by a delay in the implementation of the environmental law. In another formulation, discourses and practices are together creating social realities.

The analysis of the five previous interviews supports the claim for spatio-temporal characteristics of socio-ecological conflict. The re-emergence of socio-ecological conflict is the product of the divergent society-nature relation performed by different social actors. And dissimilar orientations toward nature are only possible by different spatio-temporal structures performed by social discourses and actions. Ecological modernization requires a particular re-structuration of time and space in the form of enlarged frameworks. This could be the explicit case of the first wave of modernization produced under the Law 19.300 / 1994. The extractive processes were intensified during the 1990s under a narrative of economic profit that could not be decelerated. In the following the analysis engages the second wave of ecological modernization addressing the socio-ecological conflicts emerging due to a very restricted account of environmental impact. Evidence will be gathering to emphasize the spatio-temporal character of the conflict at the end of the first decade of 2000s.

10.3.2.- Restricted Spatio-Temporalities for Framing Environmental Issues and Socio-Ecological Conflict

The main argument of the thesis proposes that the second wave of ecological modernization in Chile organizes time and space in a restricted spatio-temporality. A constrained spatio-temporal framework becomes the way in which environmental impacts are measured with the intention to legitimize the regional expansionism of extractive industries. In this context, policy restrictions to economic growth are reduced when the agglomerated effect of extractive industries is ignored by the mechanisms to quantify environmental impact. This situation is conceivable only by discursive stabilization of the environmental impact assessments artificially reduced to a single project within very restricted spatio-temporalities. Stabilization is obtained by the integration of three different levels: i) a particular representation of environmental impacts with no reference to real ecosystems, ii) the search for "intersectoriality policies" without ecosystems baselines, and iii) the enactment of policy mechanisms that ensure predictability/certainty for economic investment. These three levels will be addressed in depth in the following chapter advocating discourse analysis of the environmental legal framework. The current section analyzes two questions: how the mechanisms to measure environmental impacts are misleadingly restricted to very low and short spatio-temporalities, and how these constrained spatio-temporalities provoke the re-emergence of socio-ecological conflict.

The analysis shows a narrative structure that uses short temporalities and narrow spatialities to frame the understanding of environmental impact in the second wave of ecological modernization. This situation emerges by avoiding any real account of the impacts of expansion by extractive industries since the 1990s. As was presented above, the first wave of modernization, started in 1994, shows the opposed orientation by rendering ecological crisis as invariably engaged in enlarged spatio-temporalities. If the first wave of modernization allows expansion of the extractive industries by framing the environmental problem at a macro-scale, then the second wave of ecological modernization allows a maintenance of the level of growth by an environmental impact assessment constrained to the extreme micro-scale. In both spatio-temporal narratives, the articulation of the local and regional scale is missed. The global scale as something uncontrollable by policy and effects of a single project

being the only scale manageable by policy are the central discourses of the government.

Short temporalities and narrow spatialities minimize the reach of socio-ecological conflicts. In other words, to account for the environmental, social, and human consequences at the micro-scale hides the real effects at the local and regional level. Therefore, constrained spatio-temporalities have been the required discursive orientation of expansion of extractive industries during the second wave of ecological modernization. In short to maintain the path of economic growth in the country, novel spatio-temporal representation of environmental impact is required.

In the following, an extract from an interview with an academic, conducted in the city of Santiago in 2012, is analyzed. The discussion runs across the real efficacy of the environmental institution in Chile and the model of environmental impact assessment applied. The interviewee describes the environmental evaluation implemented in Chile as a similar procedure to the one applied internationally. The main difference lies in the role played by different stages of the evaluation. The technical committees in Chile are not able to establish enforceable resolutions. Consequently many decision are make by the political instances (Table 6: 5-8). This situation in connection with the lack of territorial planning means higher probability for the approval of projects that endanger local ecosystems and communities.

Narrative analysis table 6		
1	University Academic (Santiago)	In very general terms, the novel institution adds but does not add enough.
2		The institution was misleadingly negotiated and artificially limited [in its influences].
3		The environmental institution does not take responsibility for the environmental passive, which is very important in a country that has very large environmental passives [due to the extractive industries].
4		A typical example is the mine tailings; there are 260 or 270 abandoned mine tailings, which are polluting even today. Nobody takes care of these passives [...]
5		In my view, citizen participation exists only on paper but in practice does not work.
6		Even more, the resolution instances have a very high governmental influence. The president or intendant [mayor] decide for a project implementation, whether this harms the environment or not.
7		Overall, the environmental legislation had a very big gap in the regional planning [land use planning], a lack that remains until today [...]
8		In some countries the technical committee takes binding and endorsable decisions. In Chile what the technical committee decides is worthless, what matters is the opinion of regional environmental councils, or commission [which are highly

		influenced by the government]

Despite these gaps in the institutional procedure, the interview shows lucidly of the artificial restrictions to environmental concern created by the political system. The reference to the environmental passive is performed as an extreme situation. An evidence of the misleading character of the environmental institution is the omission of the non-treated waste of the extractive industries. The interviewee sustains that in Chile there are more than two hundred and sixty abandoned mine tailings, which are still highly pollutant (Table 6: 1-4). To exclude this environmental problem from the environmental institution means an artificial restriction in the scope of the environment as well as community protection.

Narrative analysis table 7		
1	University Academic (Santiago)	Both the environmental impact assessment and the environmental impact statement have the lack of a baseline
2		[...] the environmental impact assessments must be understood as ecological impact assessments. Therefore impacting everything over a given territory and in the territory there are also human beings and must be understood thus.
3	Interviewer	**But in the case of mining, environmental management appears more successful because they are working in the "uninhabited" desert with few people in the surroundings.**
4	University Academic (Santiago)	There are two analysis one micro and one macro. At the micro level there is greater success, because the waste is handled, it must to be managed. This is very easy.
5		From a macro point of view the issue is more complex because there are indirect effects with some inputs such as water and energy.
6		The electricity demand of mining in this country means that 70 % of the energy goes there and who produces it? 13 or 17 thermoelectric power plants, some of them based on coal, polluting at a high level.
7		From a macro point of view, mining has serious problems.

The performance of ecosystems integrates all ecological components, that is the natural and human ones. In the case of Chile there are no baselines, in other words, information is not available to model environmental and human damages produced by project in rural areas (Table 7: 1-2). An example presented in the interview describes how in the south of Chile different measures are used with the intention to artificially decrease the environmental damage produced by a coal mine project. But none of the measurements make sense for describing ecosystem performance. When the interviewee is asked about the success in environmental management of the mining industry, he proposes two different scales to measure environmental performance, the micro and the macro level. The micro level refers to the internalization of pollution. In this sense, there are successes because pollution management is a direct action of

companies. At the macro level, which integrates the holistic effects of mining activity into the regional and local scale, the situation is different. Mining activity has very serious problems to counteract its own pressure for productive inputs like water and energy. Seventy percent of the energy demand in Chile is destined for the mining sector and is produced with high levels of pollution (Table 7: 4-7). The interview reinforces the argument that the socio-ecological conflicts during the last years are produced by a very restricted spatio-temporal evaluation of environmental impacts. This policy limitation or constraint finds no justification in any factual conditions.

The following excerpt comes from an interview conducted with a representative of the civil society. The discussion reflects the problematic definition of the type of projects, which are mandatorily considered under the environmental impact assessment. According to the NGO director, in Chile, the law defines that forest as well as agriculture projects are exempt of environmental evaluation.

Narrative analysis table 8		
1	Civil Society Environmental NGO (Santiago)	Forest expansion is not environmentally evaluated; neither forestry projects nor agricultural projects are environmentally assessed.
2		The law only applies to those projects higher than 500 hectares. So what do the privates do? They present project of 499 hectares
3		In the case of agricultural projects, they are totally exempt. Thus have tremendous problems because all clear-cutting practices are not environmentally assessed and they lead to soil loss. In addition, use of agro-chemicals in forestry and agriculture is not environmentally assessed, and worse, no standard exists in Chile.
4		That is one of the big gaps we have.

"The expansion of the forest industry" is the sentence used by the interviewee to reflect the accelerated growth of this sector. The law applies only to projects bigger than five hundred hectares. A good way to understand this data is to consider that the Central Park in New York is approximately 349 hectares. Slyly, projects are presented with a maximum extension of 499 hectares for environmental evaluation, says the interviewee. In addition, agricultural project are not considered at all in the environmental evaluation and such is extremely problematic for the cases of clear-cutting and agro-chemicals. The narrative demonstrates relevant gaps in the Chilean environmental law, which has excluded systematically very relevant environmental issues from environmental regulation.

Narrative analysis table 9		
1	Civil Society Environmental NGO (Santiago)	In the case of mining, the mining code rules over almost all laws in Chile
2		These laws [first order] are above any environmental regulation. Therefore, the water code, the mining law, and the energy law are above all
3		That is the reason why we have ecological conflicts, because there is a hierarchical structure that gives legal supremacy to some laws over others
4		This outlook will not change unless the protection of nature is recognized in equal status.
5		Today, Chile is a country that is not only delayed; it is very much delayed in the protection of biodiversity.
6		[Extractive projects] can do whatever they want. So the socio-environmental conflicts have not, from our perspective, a way to be solved.
8		We are in a vicious circle and one possible out, without making drastic changes in terms of legal structures, will be to support communities.
9		Weigh the balance between companies and the community in environmental evaluation

In the context of a conversation about the problems in the mechanisms for environmental evaluation, the representative of an environmental NGO highlights the hierarchies of the law in Chile. The mining code, as it is called, represents the legislation for mining activity, which is prevalent over any law for environmental protection. The interviewee narrates, with resignation, the low value given to nature's protection in the law (Table 9: 1-5). Ecological modernization as the harmonization of the economic imperative of growth and the protection of nature cannot be the case in an economy based in extractive industries. "Industries can do as they want" (Table 9: 6) is the expression used during the interview. This condition is not only discursive; in addition, it has been enacted by the very organization of the legal system in Chile. In this narrative, the protection of ecosystems is very delayed, and the only way to improve the situation is by supporting local communities. The balance between companies and community should be obtained in everyday practices. As was seen in the previous interviews, citizen participation exists but only in legal documentation and not in practice.

The following interview was conducted in the city of Santiago on October 2013 with a high level politician. She was the responsible for organizing the transformation to the environmental institution and for designing the future Environmental Ministry. In the following excerpt the interviewee describes the economic context that frames the parliamentarian discussion about institutional transformation in Chile.

Narrative analysis table 10		
1	High Level Politician (Santiago)	During the whole of the 1990s and so far into the 2000s, the economic sphere has been characterized by enormous GDP growth,
2		which in turn speaks of intensive exploitation of natural resources and the consequences that entail.
3		In a context like ours, the concept of sustainability, understood as decisions that achieve a balance between productive development, environmental protection and social equity, is still under development within the policy.
4		So, the decisions that promote production turned out to be where the different economic sectors managed to prevail over environmental protection.

The narrative shows explicitly the prevalence of orientations concerning economic development over environmental protection during the process of ecological modernization. In the explanation, the politician expresses a connection between the impressive GDP growth and the intensive exploitation of natural resources (Table 10: 1-2). The notion of sustainability plays a key role in the speech. The Chilean context lacks a real implementation of sustainability. The words used are "our context needs to develop the notion of sustainability". For this reason the political decision that promotes economic growth in each economic sector overcomes the social intention for environmental protection.

The core of the political narrative proposes that sustainability has not been achieved because of an institutional deficit. The exploitation of natural resources has been controlled, but the regulatory framework is weak. The generation of environmental norms has not been enforced by the environmental institution. The conversation becomes increasingly connected with the institutional design as the core of the ecological crisis in Chile.

Narrative analysis table 11		
1	High Level Politician (Santiago)	[...] An institutional design did not exist in Chile that ensures equilibrium in the decisions that seek out sustainability.
2		The vast exploitation of natural resources was developed with control elements, such as the environmental impact assessment,
3		but it operated without a strong regulatory framework,
4		One of the criticisms that is made of the National Environmental Commission (CONAMA) proposes that its management was focused on the environmental impact assessment, to the detriment of environmental standards generation.

To the question of the environmental institution as conducting or modifying the society-nature relationship, the interviewee seems to agree with the first option. In practical terms, there is a running process of ecological awareness in society, and

authorities are concerned about this. The narrative structures a gradual temporality for institutional change. Environmental conflicts are based on the slow incorporation of sustainability, as action orientation, in the institution. Authorities seem to be more concerned with productive promotion than with environmental protection and social equality.

Narrative analysis table 12		
1	High Level Politician (Santiago)	It is a good image
2		Whether the environmental institutions organizing or transforming the relationship between society and nature.
3		I think that Chilean society is undergoing a process of awareness and knowledge of environmental issues
4		I think there is an ongoing process,
5		An advance beyond that, in the direction of a common good economy or a different conception in the patterns of consumption and production, is an issue that is underway.

For the narrative analysis two elements appears transversal in different actors description: i) the institutional deficit that prevents an effective environmental protection, and ii) the lack of a sustainable approach that balances productive promotion and environmental protection. In this narrative, Chile is being slowly opened to the international trend of ecological awareness and institutional improvement is the right way to overcome socio-ecological conflict.

The following extracts reproduce part of the interview with a lawyer working during 2012 for the Environmental Superintendence. The conversation revolves around different elements to better understand the novel institutional model. Specifically, the extract refers to the right to live in a free pollution environment as presented in the Chilean Constitution of 1980, and enacted during the military regime. Nevertheless, application of this privilege is not exempt from trouble. The lawyer is very categorical: the environmental problems should be due to an action, not an omission, and this action should be illegal but not arbitrary.

Narrative analysis table 13		
1	Policy Makers, environmental institution (Santiago)	basically we received an international in-put "the environment must be taken seriously"
2		Nevertheless in the record, there was some commissioner who said that the right to live in a free pollution environment is not an "enforceable right "

| 3 | | But if you read the article 19.8 all those guarantees are enforceable […] |
| 4 | | nevertheless, in order to apply the right of protection the law demands that the cause of the environmental problem should be an action and not an omission and should be illegal and arbitrary. If it was an omission it cannot be acceptable as well as if it was illegal and not arbitrary |

Beside the discussion regarding the Chilean Constitution, what seems to be clear is the constant institutional limitation to confront effectively the socio-ecological conflicts emerging in the country. As it was presented in Table 7, the maintenance of socio-ecological problems is not connected with the direct effects of extractive process. The internalization of pollution is probable. The main issue is the indirect problems deployed by the extractive industries at the local and regional level. The following extract highlights an interview with a university academic in 2012. The discussion illustrates the magnitude of the water conflict in the Atacama Desert between local communities and the mining industry.

Narrative analysis table 14		
1	University Academic (Santiago)	A community that lacks a water resource cannot exist as a community and it is unable to work
2		The traditional activities, which justified the presence of rural human settlements and generated communities, disappears
3		Rural community loses social discipline, which implies protecting terraces, maintaining crops, cleaning irrigation channels, and distributing water in a socially equitable way.
4		The community has no reasons for continuing

The narrative is very severe. The water is disappearing for many communities in the Atacama Desert, and the scholar sees no reason for these people to continue living in rural settlements. The total depletion of water is not presented as a real scenario for the policy maker. Nonetheless, it exists, and even more, is very present for the local community. When looking at both discourses, the question that emerges is why such different interpretations appear. Socio-ecological conflicts are not overall problems, in other words, they are selective in consequence and origins. Two different communities, located within no more than fifty kilometers apart, may confront totally different scenarios. The following excerpts belong to an interview conducted in the Atacama Desert in 2012. The interviewee is a community leader in the town of Caspana. This community possesses water rights over a small river, rights they obtained during its privatization in 1980, which are maintained today without endangerment. Because of its geographical position, the town is not close to any

copper mines. The interviewee's narrative is full with expression of self-identity and differentiation regarding other communities.

Narrative analysis table 15		
1	Local Community Atacama Desert	In Ayquina y Toconce there are water conflicts since the 1960s
2		Chuquicamata take their water
3		We do not have anything against the big mines,
4		Because the water is ours, we have the water right
5		I have nothing against the big mines, they do not disturb us

A very restricted spatio-temporality for framing socio-ecological conflict prevents a rise of social movement in the ecological arena. If two neighboring communities with an identical ethnical background are incapable of finding common positions within the water conflict, then the very social dimension inside socio-ecological conflict is damaged. The individualization of environmental problems, in terms of selected local groups, is presented recurrently in the interview.

The analysis of the six previous interviews supports the argument of a restricted spatio-temporality as a motor for socio-ecological conflict. There are dissimilar orientations toward nature between the social groups that intend to restrict the spatio-temporal character of ecological damages and those that try to engage an integrative perspective. The second wave of ecological modernization requires a particular re-structuration of time and space in the form of constrained frameworks. This is the case of the modernization process happening under the Law 20.417 / 2010. Extractive processes have intensified in the last year under social procedures that restrict the scope of ecological damage.

10.4.- Chapter Ten Summary; Narrative on Ecological Modernization

This chapter has analyzed different social narratives regarding the modernization of the environmental institution in Chile. The re-emergence of socio-ecological conflict is presented as the overall context in which different, or put more succinctly, opposing, discourses and actions toward nature clash.

The narratives have been organized to make sense of and reconstruct the two major waves of ecological modernization represented by the environmental Law 19.300 of

1994 and 20.417 of 2010. During the first period the narratives surrounding environment are organized at the macro-scale. Enlarged and extended spatio-temporalities are offered as the way to render the ecological crisis. The environmental problem as well as the political solution both propose a global scale and 'gradualness' as the main orientation for social action. In a second wave of modernization the narrative of environment is framed at the micro-scale. Restricted and constrained spatio-temporalities are suggested as the manner for understanding environmental impact in singularized environments. Socio-ecological problems and the institutional responses to these are confined to an environmental form of impact assessment that is artificially compelled to the surroundings of the single project. In this way the environment impact assessment as a policy tool becomes unable to account for the agglomerated effects of a project's cluster at the local and regional levels.

A narrative approach acknowledges the discursive orientation toward enlarged or constrained spatio-temporal frameworks found in different social actors' speech. This feature of narrative description, together with interpretations of the socio-ecological problem, are the two dimensions that have organized the analysis. In more detail, the focus was centered on: i) different understandings of ecological modernization, ii) selective orientation for action regulation in each group, and iii) specific spatio-temporal frameworks for constraining / allowing social action toward nature.

In the last two decades in Chile, a controversial reorganization of actions and roles has been occurring in the environmental scene. The socio-ecological conflict has re-emerged as a consequence of spatio-temporal coincidence between opposing stances toward nature. Ecological modernization as a discursive reality does not depend on a stable construction of time and space, and moreover, the modernization processes in society are not framed inside time and space as fixed containers. On the contrary, social narratives mediate the stabilization of specific spatio-temporal regimes and become, together with institutional discourses, a single force to enact practices and procedures that materialize an orientation toward nature's commodification.

The narrative analysis uncovers a selective organization of spatio-temporal structures in which the macro as well as the micro scale has been used to accelerate the expansion of extractive industries. Enlarged as well as restricted narratives about

space and time have been used indistinctly in this process. Consequently, socio-ecological conflict has intensified during the last year throughout the country. The following chapter addresses in depth the critical discourse analysis of the Chilean environmental laws that embody ecological modernization.

Chapter Eleven: Empirical Research III
Time-Space Re-Structuration in the Chilean Environmental Law of 1994 and 2010: A Critical Discourse Analysis of the Society-Nature Relationship

Chapter Overview

The enactment of Law 19.300 "Environmental Bases" of 1994 appears in official discourse as the beginning of a modernization process of the environmental institution in Chile, which culminates with the creation of the "Environmental Ministry" through the Law 20.417 of 2010. This chapter will challenge the common understanding of ecological modernization as simply an institutional improvement process by emphasizing how a conflictive spatio-temporal articulation is promoted through environmental legislation.

The argument exposed in this chapter could be summarized in the following way: i) Ecological modernization affects the social organization of time and space because it induces a particular form of relationship between society and nature; ii) This very subtle transformation in the overall organization of time and space is what is understood within the concept spatio-temporal restructuration; iii) In Chile's case, the transformation in the environmental legal framework discursively promotes growth of extractive industry; iv) The re-structuration of time and space, which is the basis of the expansion of the extractive industries in the last thirty years, is in constant tension with the spatio-temporality of local community; v) The re-emerging socio-ecological conflicts are clear evidence of two opposing standpoints towards nature commodification and preservation; and vi) Socio-ecological conflicts are also evidence of two contradictory spatio-temporal structures struggling for primacy.

To approach the modernization processes by the light of a spatio-temporal restructuration perspective requires an expansion into the dimensions of analysis. By focusing on environmental discursive dispositives as well as socio-ecological conflicts, a fruitful space opens up for understanding the processes leading to, and consequences of, the spatio-temporal restructuration. A critical discourse analysis orientation replenishes the interpretative condition as well as the action orientation for actors. These are the characteristics of the micro-level inside long lasting and widely spread environmental processes. The discourse analysis runs through the history of the Chilean modern environmental laws with a focus on: i) presidential speech, ii) the commission discussion, and iii) the original and final approved law. At each level a prominent spatio-temporality is highlighted and analyzed in its scope and significance. Furthermore, legal mechanisms that regulate social action are also approached regarding their capacity to reorganizing time and space. Finally, discursive dispositives are derived with the intention to show their capability for approaching spatio-temporal restructuration.

The analysis concludes with a transformation of spatio-temporal regimes from: i) slow and widely extended but disarticulated and naturally restricted productive areas, ii) accelerated integration of productive clusters with regional extension that are expanding production to the regenerative capability of ecosystems, and iii) over-accelerated environmental markets with national scope that increase production of extractive industries without any social and environmental restriction.

11.1.- Critical Discourse Analysis for the Chilean Environmental Law N°19.300 of 1994, Introduction

The discourse analysis of the Chilean laws N° 19.300 of 1994, known as "Environmental Bases", and N° 20.417 of 2010, known as "Environmental Ministry", are presented in three parts: i) the presidential speech, ii) the factual law, and iii) the parliamentary discussion. Each of the aforementioned parts acts independently within the consolidation of the Chilean environmental legal framework. In other words, each part of the law`s deliberation should be considered as independent discourse inside a major social narrative. In this sense each part of the law´s deliberation plays a specific role in the stabilizing the society-nature relationship after 1994 and 2010 respectively.

From another perspective, the society-nature relationship it is not only influenced by different discourses, but as a major narrative has the capability to organize different orientation together. In other words, the society-nature relationship as social narrative allows a heterogeneous form of relation toward environment in the discursive as well as material dimensions. Heterogeneous means that the construction of a global discourse about environment it is far from being a coherent corpus or an aligned narrative. On the contrary, as every modernization process implies, the transformation in the environmental framework stabilizes different and sometime opposed social orientation. This heterogeneous condition of the society-nature relationship makes a theoretical base from where the argument proposing that the search for sustainability could lead to unsustainable forms of relation with nature at different geographical scales gains strength. When approached as discursive realities, every part of the environmental legal framework -presidential speech, commission discussion, law deliberation- has some degree of independence. Nonetheless, this situation of partial independence does not diminish its effectiveness in shaping social reality.

The presidential speech, which introduces a first national environmental law proposal and begins parliamentary deliberation, is approached mainly in its "performative capability"[197]. That means its capability to portrait the ecological crisis and the socio-

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[197] Here the performative capability of discourse is used in the sense given by J.L Austin in his theory of speech acts, especially in the book "How to do things with words" (Austin 1962). In a very brief account, performative utterances are sentences with the capability to change social reality, and do not merely describe it. From this perspective, performative utterances are neither right not wrong because

ecological conflict from an allegoric perspective. Allegory means in this context the social construction of images and metaphors to approach the causes as well as the possible solution to the problems in the environmental sphere. The presidential speech is a very strong device to create a common narrative and shared meaning around the ecological crisis by utterance.

The factual law stabilizes a group of legal mechanisms to evaluate, avoid, compensate but also permit certain forms of environmental impact. The legal corpus is a central motor in the creation of practical procedures, which has the capability to embedded social discourses in social practices. By this process of enacting a law, certain actions become not only legitimate but also effective and efficient in reshaping the society-nature relationship. Intending to reveal this mechanism, the discourse analysis will be applied to the factual law.

Finally, the parliamentary discussion will be approached in a search for different forms of social consensus-dissensus regarding the new pattern of society-nature relationship throughout the 1990s in Chile. Through analysis of the parliamentary discussion it will be possible to observe whether parliament reflects different positions toward nature that exist in society, which run the gamut from total conservation of nature without human intervention to total commodification of environmental services and resources.

11.1.1.- The Presidential Speech of 1992, Presentation of the Law N°19.300 / 1994

The speech from September 14th of 1992, given by the former President of the Chilean Republic Patricio Aylwin Azócar on the occasion of introducing the law "Environmental Bases" 19.300, will be analyzed in the following section with particular references to: i) the construction of a prevalent territoriality and temporality and, ii) the emergence of a particular dispositive to re-articulate time and space in the form of the adequacy of problems and solutions. As a conclusion, and on a higher

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they are, or they are part of, the social action deployed. Concerning environmental issues, the notion of rendering e.g. ecological crisis in a particular way moves in the direction of performative utterances. When the law is enacted, specific representations of the environment acquire a novel condition and appear as frameworks for social action. In that sense, the official speech about environment creates reality.

level of explanatory abstraction, it is proposed to understand the spatio-temporal re-articulation that occurred during the 1990s as a discursive dispositive. This dispositive consolidates a spatio-temporal "intermezzo" between the social action oriented toward nature's commodification and that aimed at the protection of ecosystems. Within this intermezzo, social action is oriented to create the basis for increasing exploitation of natural resources, as was analyzed in chapter nine that explained the Chilean context of ecological modernization.

A Predominant Discursive Territoriality

A first discursive strategy deployed in the presidential speech that introduced the environmental law of 1994, was to situate the global scale as the predominant scenario of the environmental problem. The global scale could be understood in a double sense for the environmental issue: i) In a positive way, when the speech remits to the concept of biosphere and how some of its components are affected as a planetary totality, for example, in the case of the ozone layer; ii) In a negative way, when this wide geography and long temporality blurs other relevant scales for environmental issues. The political sphere downplays the regional, national and local administrative divisions in order to account for the global effects of ecological damages.

These two dimensions are analytically as well as practically interconnected. However, the relevant distinction lies in acknowledging that not every environmental issue, problem or conflict, must occur at the global or supranational levels. In opposition to the extended belief, it is relevant to confront the global scale as the privileged dimension of environmental concern. During the 1990s, the local level was removed from the environmental discussion by international agencies, and the presidential speech seems to be monopolized by the "global reference".

The sociological relevance and discursive significance of introducing the environmental problem through the prevalence of the global scale will be explained in the following. Some possible consequences associated with this process will also be discussed. In order to fulfill this task, three mechanisms will be provided to analyse how the Chilean government defines the territorial "scenario" of the environmental

problem in the 1990s. The final intention of this section is to combine spatial as well as temporal reflections in order to illustrate how the establishment of a new environmental framework in Chile involves a particular process of time-space re-structuration.

The territorial construction of a predominant scale is raised through three discursive strategies: i) the dissolution of states frontiers and national responsibilities, ii) the creation of the global limit as interdependence and fragility, iii) humankind and the next generations as the inhabitants of the globe. Prior to starting the analyses of these three categories, I will reflect over the sociological relevance for introducing socially the ecological concern at a predominant geographical scale.

Quite a number of researchers have reflected on the repercussion of the image of the earth captured by the Apollo mission to the moon in 1960. Some consider this specific image, installed in our understanding of the world, a great and positive step because it accounts for the necessary interconnection of ecological system and environmental protection. This is the discourse used in international documents such as the UN report "Our Common Future; the Brundtland Report" (World Commission on Environment and Development 1987) and in many national legal framework around the western world, wherewith Chile is not an exception. Others criticize this interpretation because the image diffuses and even omits other geographical scales such as regional, national or local. Because of that, the social responsibility, which is always spatio-temporal located, becomes increasingly elusive.

The thesis argument here subscribes to this latter position in its analysis. Introducing the global scale as the predominant territoriality, even in an allegoric way, makes it difficult to observe ecological problems that have been and still are constructed by action at very local scales. The global scale appears as summation of pervasive outputs, like the idea of a domino effect, encompassed trough time and affecting: i) the discursive construction of an international division of roles in the ecological problem. There are countries that created the ecological crisis, others receive this undesirable situation; ii) the discursive but erroneous construction of a direct congruence between problem and solution in the ecological problem. In this sense a misleading argumentation proposes that when the problem's scale is global, the global

should find the solution. Three discursive mechanisms will be explained in order to show how they have been used to legitimize the global scale as the preponderant level of action in the ecological crisis.

a) The Dissolution of State Frontiers and National Responsibilities

Different statements discursively address the dissolution of frontiers and responsibilities. A first process could be found in the subtraction of the constitutional warranty "to live in an environment free of pollution" of its condition as an enforceable right. This is formed by two integrated strategies: i) the discursive transformation of a right to a duty; ii) the explicit call does not make demands on the State for the fulfillment of the constitutional guarantee. The presidential speech removed the substantive conditions and positioned the constitutional guarantee instead as a social goal that is potentially achievable.

"The issue here is not to increase the catalogue of rights that people can demand under the Constitution and of the rest of the inhabitants of the planet." (Aylwin 1992: 5) [198]

To emphasize environmental problems at a global scale blurs frontiers and achieves global repercussions. Situations like ozone layer depletion, or the acid rain, gain a prevalence over those presented at the local scale. In another and similar strategy, the cases of environmental problems anchored to the local scale are moved discursively to the global scale by their repetition in different regions of the world. This is the case of the advance of the deserts or desertification phenomenon. It is especially clear how the very localized environmental causes as well as the social-specific consequences are subordinated to a global narrative, and thus blurring local and national responsibilities.

The argument claims that the construction of a global scale is made through a process of responsibility dispersion. Whatever the case, frontiers and limits define responsibilities and at the same time delimit control and power. The global scale, in

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[198] All references to official and presidential speeches analysed in the thesis have been translated to English by the author. Due to the informal character of the spoken language, the Spanish text is not included.

this particular case, is used to avoid the responsibility for the national contribution to ecological crisis. In order to illustrate this point two extracts from the presidential speech of 1994 are presented. The first shows how the vision of the Earth as an interrelated system is prevalent. The second reinforces how some particular form of environmental degradation reached a global scale.

"On one hand, it does not distinguish the borders between the States […] The boundaries between the different countries are dispelled into the cosmic vision of the Earth, in the same way they lose also the sense regarding avoiding the environmental degradation in which we live." (Aylwin 1992: 5)

"The environmental degradation within a country not only affects this one, but sooner or later it affects the global health of the planet. Such is the case with the hole in the Ozone layer, changes in climate produced by the increase of desert, and acid rain originated by carbon monoxide emissions. This leads us to develop a substantial conclusion that environmental damage is universal, but also it must be a universal effort to face it." (Aylwin 1992: 6)

This interpretation of the presidential speech as "avoiding taking responsibility" coincides with the position of Argentina in 2010 at the 65th UN general assembly. The current president at that time, Cristina Fernández, states the unfairness committed against the developing countries, when they should charge the "environmental passive" caused by the industrialized nations.

"It is unfair that the developing countries that struggled with economic growth have just overcome poverty, and are the ones who have to bear the environmental liability product of the countries that have polluted the world for decades." (Fernández 2010)[199]

b) The Creation of the Global Limit as Interdependence and Fragility

Another discursive way to discursively devise the global scale in environmental issues is the reference to the fragility of the world and how nature is nothing else but a

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[199] Available in Internet http://www.ambiente.gov.ar/?idarticulo=4610 . Translation by the author.

strong interdependence of ecosystems. Certainly, the fragility of the ecosystems and their interdependencies are not unreal. But something substantially different is to reinforce the global scale as the privileged space for the environmental political measures. The argument proposes that the discursive connection between the notion of global limits, vulnerability and interdependency, is a particular narrative of the global scale that when strengthened excludes other alternative explanations.

The alleged "fragility of the planet" is the substrate that allows different government and international organization to call for global measures. In this case the interconnection between ecosystems becomes the central social image in the representation of nature. The problem with this representation is not what it shows but what it hides. The fragility is not something reserved to the global scale, on the contrary, what indeed are the most fragile are the singular and particular ecosystems, locally situated and temporally developed.

Actually, the interconnection of a global scale environment could be seen, from a biological point of view, as the most resilient ecological unity. The discursive transformation of thousands of ecosystem in a one and only "world-wide ecosystem" means: i) to anchor the socio-ecological problem at the slowest scale of transformation possible to capture, and ii) in many cases, the most stable to standardize the unpredictable regional fluctuations. This situation could be seen as an explanation why an accurate modeling, for example, of climate change at the global scale brings about so much discrepancy between natural scientists. Copious amounts of money and complex computational technics are unceasingly used and developed to predict the path of transformation of the climate in the coming years, decades and centuries, by reconstructing climate not only in the last decades but past millennium.

Fragility and the interconnection as discursive characteristics of the environmental problems function as devices that help to render the spatio-temporality of global system regeneration at the core of the society-nature relationship. This representation runs inside a global production regime oriented exclusively to growth by the means of sustainable measures. The Earth is considered fragile only in the context of increasing degradation. The following extract shows some recurrent and apocalyptic discourses in the Chilean presidential speech.

"This vision of the Earth confronts us with a reality that seems to be somewhat unknown and useless in our everyday life: the existence of a planet that has restrictions. The clear perception of the boundaries emphasizes the need to adjust human behaviors to these limits because we cannot continue damaging without running the risk of our own future life on the Earth." (Aylwin 1992: 4)

The thesis' argument emphasizes the global scale as the most resilient level to measure environmental damage/ Discursively reinforcing this scale allows an increasing process of production by restricting only the damaging behaviors. For contemporary capitalism the political reinforcement of the global scale expands the limits of exploitation to the whole planet. This representation could be seen as another form of nature reification, which enhances every ecosystem as resources and commodifies every use of nature.

"In a capitalist society, social relations to nature are to a large extent reified, since the ultimate goal of every productive use of material objects is its commodification. Hence, expansionary capitalist dynamics depends upon the permanent appropriation of the material world, thereby creating nature not only through new resources but by conditioning total human environments to the necessities of the valorization process." (Becker and Raza 2000:14)

Becker and Raza (2000) suggest the reification of nature required by the capitalistic enterprise is only possible through a constant appropriation of the natural world. In a social context that is aware of the ecological crisis and searching for environmental protection, the only way to expand the commodification of nature lies in discursively creating new and further limits for exploitation.

c) Human Kind and Subsequent Generations as Global Habitants

A third possible strategy meant to promote the global scale as the predominant territoriality for environmental action is the reference to humankind, in particular the next generations as the principal actors being protected. The global reference is not only a territorial reference, on the contrary, with the global scale emerge also a global character or personage which dwells in the new global world. The following extract

of the presidential shows how the ecological problem it is understood as a challenge for the whole humanity.

"On the other hand, the preservation of a healthy planet is a challenge for all humanity. It is not easy to think about another enterprise to which success is so narrowly tied to the cooperation and integration of the different States." (Aylwin 1992: 5)

It is possible to see, once again, how these kinds of discourses present a plausible reality by omitting some concrete, particular and even necessary local references. The discourse, which introduces ecological modernization in Chile, makes the astonishing omission of any possible references to the Chilean citizen as a relevant actor in the protection of nature. The presidential speech presents a double-edged strategy: i) a constant reference to humankind as a central actor of environmental protection, and ii) the central role given to individual action as essential for environment protection. Rendering the socio-ecological conflict in this way is, without a doubt, to de-politicize the ecological issue[200].

Particularly for the case of Latin America, and following international environmental discourse, it is possible to argue that the socio-ecological conflict has been framed in an increasingly *shrinking present*. The actual environmental crisis is due to the mode of production of previous years and not an overall or historical tendency toward the commodification of nature since colonial times. The previous generation is accountable for the ecological crisis, and proceeding today is oriented to assure the availability of natural resources for future generations. This could be summarized as saving resources for new generations, and a central element is the regenerative capability of the ecosystems. Furthermore, to strengthen the spatio-temporal regeneration capability of nature is the most predominant consequence of moving the ecological crisis to the global scale. From this point, applying a speculative rationality toward nature become easier. This shifting, which rationalizes the organization of the society-nature relationship is only possible by a temporal and spatial redefinition of

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[200] The running process of depoliticization of the socio-ecological conflicts has been explained before in the part two of the thesis. See specifically chapter nine on the Chilean context of ecological modernization.

the ecological problem, where the central pieces demand more respect toward nature in a context where problems are global. This contradictory portray of the society relation with nature seeks more protection, but at the same time, delivers more knowledge and instruments to increase human pressure over environments.

"The challenge, that obliges us to save the planet from this degradation, exposed by human activity, requires the understanding that environmental protection is not only a right of every person, but at the same time a "human obligation" that forces us to be aware and to emphasize the need to demand more of us for the survival of our own human life." (Aylwin 1992: 5)

Temporal elements are used and connected with the global scale, and in a particular complex fashion. Following Swyngedouw (2010, 2011), is possible to argue that the environmental crisis, especially the issue of climate change, is constructed within an apocalyptic narrative. This kind of millennial representation, even though nothing new in human history, will claim urgent remedial action (accelerated temporality) for the ecological crisis. In opposition, many political actions and policy resources are used to accurately predict the slow but effective capability of regeneration of the global ecosystem (decelerated temporality). This articulation of two opposed temporalities is one of the most relevant characteristic of the de-politicization of the ecological crisis and deserves close attention. In what follows a quote from the Belgian author Swyngedouw is presented. While it may seem extensive, it certainly expresses some of the arguments presented thus far.

"The consensual times we are currently living in have thus eliminated a genuine political space of disagreement. These post-political climate change policies rest on the following foundations. First, the social and ecological problems caused by modernity/capitalism are external side effects; they are not an inherent and integral part of the relations of liberal politics and capitalist economies. Second, a strictly populist politics emerges here; one that elevates the interest of an imaginary 'the People', Nature, or 'the environment' to the level of the universal, rather than opening spaces that permit the universalization of the claims of particular socio-natures, environments, or social groups or classes. Third, these side-effects are constituted as global, universal and threatening. Fourth, the 'enemy' or the target of concern is

continuously externalized and becomes socially disembodied, is always vague, ambiguous, unnamed and uncounted, and ultimately empty. Fifth, the target of concern can be managed through a consensual dialogical politics whereby demands become depoliticized and politics naturalized within a given socio-ecological order for which there is ostensibly no real alternative." (Swyngedouw 2010: 228)

I wish to state that the construction of the global scale as a particular territoriality of the ecological crisis also brings about a particular understanding of time. A specific territoriality is connected with certain forms of temporality, but this link is complex and does not simply state a connection between "global scale" and the "rapid temporality of global flows". On the contrary, my proposal claims that the characteristic temporality of the global scale is gradualness, even if it does not deny other forms of relation with dissimilar notions of time, as in the concept of urgency (accelerated temporalities). The main argument proposes to conceptualize a spatio-temporality for environmental issues oriented towards big scale and slow time[201]. This movement, as was stated before, enhances the spatio-temporality of nature's regenerative capacity and converts it into the last frontier for the radicalization of speculative modern rationality in environmental issues.

A Predominant Discursive Temporality

A second discursive strategy distinguishable within the presidential speech of 1994 is the construction of a predominant temporality in which to render the socio-ecological conflict. The analysis combines two temporal and discursive elements: i) an action orientation towards the future under the notion of development, and ii) a particular articulation of the idea of development with bases in the discursive association of notions like accumulation and gradualness.

For the environmental issue a predominant temporality performed as gradual by the official discourse implies different facts, here some of the most relevant are summarized: i) nowadays the environmental problem is understood under the image of accumulative processes, for example, the greenhouse effect, climate change, acid rain, and so on. Each of these processes has been and will be gradual in the sense of

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[201] For the theoretical bases of this perspective in social sciences see chapter four.

achieving critical levels, which endangers the subsistence of human activities and life. From the international level, this situation of gradualness requires increasing resources and capabilities invested into modeling and anticipating future scenarios; ii) each answer from the political system dealing with accumulative processes should in fact be gradual. The environmental problem has been created over decades and even centuries, and the realistic possibilities for dealing with them should also be deployed in the long run; iii) nature conceived as a source of resources also has a particular temporality for its capability to be regenerated. This slow temporality, called glacial time by Castells (2002), is also the same temporality that should be used for the exploitation of natural resources.

In this context, three mechanisms have been applied to promote gradualness as a central narrative in order to apprehend the socio-ecological problem in Chilean environmental legislation. In the following, the mechanisms are listed and also discussed for sociological consequences. Using these three mechanisms in the temporal dimension together with the description made of the predominant territorial scale, the next section endorses the concept of "spatio-temporal discursive dispositive". Dispositive means a way to perform by utterance a social strategy that creates a common understanding of the environmental issue. The main characteristics of these dispositives during the 1990s in Chile were the subtraction of the social struggle and the exacerbation of nature performed as economical resource inside the ecological arena.

The three strategies involved in the construction of a predominant temporality are: i) a future development as temporal orientation and limit, ii) the preventive capability as a temporal way to avoid the social conflict, iii) the accumulative and gradual temporality in the environmental issue as a way to describe ecological phenomenon. Before describing each of these three mechanisms in detail some clarifications are in order. In particular, the clarifications are around the sociological relevance of understanding the environmental problem from the discursive construction of a prevalent temporality.

Common and extended images of *slowness* are some processes of growth in nature. Of course not all the natural processes are in slow motion; oppositely some are

amazingly fast. These phenomena include natural disasters, such as hurricanes, tsunamis, earthquakes, avalanches, mudslides, and floods. Even in the everyday experience of any person, the decomposition of certain live foods occurs extraordinarily fast. Nevertheless, it is still possible to argue that references to growing trees, the consolidation of mineral deposits and/or petrol reserves always function as referents to socially perform the sluggishness of nature (or slow motion of nature). For this reasons, the capitalistic temporality will always be in conflict with natural time. Glacial time is easily opposed to economic acceleration. Ecosystem growth appears in contrast with market exchange. This dichotomy lies at the basis of the socio-ecological description, which intends to understand how the particular form of production in the modern society becomes the main responsible for environmental crisis. Nonetheless, in the discursive consolidation of a particular temporality for rendering the ecological problem, this conflict is suppressed. In the background of this interpretation rests the fact that the temporality of economic growth and the temporality of nature's consolidation are in fact contradictory. Despite this, the discursive use of temporal gradualness is a powerful strategy applied in the political field to render the environmental problem harmonious. The prevalence of the regenerative time of nature (slow motion) is no longer considered as a problem but astonishingly as a resource for the economic organization and growth.

a) A Future Development as Temporal Orientation and Limit

The construction of a prevalent temporality in the environmental legal discourse refers centrally to the notion of *slow-motion gradualness*. However, to make this temporality the prevailing response to the environmental problem requires other temporal mechanisms: i) a temporal orientation for future development, and ii) a temporal orientation to prevent and avoid future conflicts.

The discursive orientation toward future stages of development is not only a narrative structure used by the countries under the label of "undeveloped". In addition, the industrialized countries legitimize the subordinated position of environmental protection to the imperative of growth under the idea of maintaining welfare. If for some the problem is the lack of economic growth, for others it is the permanent possibility of economic sluggishness. In this regard, many authors have stated that a central component to creating the subordination of environment protection to the

imperative of growth was the publication of "Limits to Growth" (Meadows et al 1972) commissioned by the Club of Rome. This report initiated the search for strategies of growth in the context of limited natural resources, not the limitation of production.

The construction of a temporal orientation to the future, which makes thinking of further development plausible, implies overcoming the conflict between economic orientation and environmental protection. In the words of Hajer (1995), this is a consequence as well as a characteristic of "ecological modernization". In the presidential speech there are three important elements that harmonize this tension: i) to stabilize a representation of nature as "national resource", ii) to postulate a non-restrictive protection of national natural resources, and iii) to understand the environmental crisis as side effects of a particular mode of economical production aimed at achieving national welfare. In the following, three quotes from the presidential speech are offered. In the first, strength is placed on how in the past the search for economic wellbeing endangered the environment. The second introduces some "ecological restriction" but without compromising an effective use of natural resources. The third addresses how the dilemma between economic growth and ecological preservation is discursively suppressed.

"Nature in Chile - our environmental reality-, is today strongly pressed upon by the requirements that development creates. The efforts by the Chileans to achieve economic well being has seriously compromised the capacity of our natural resources and our environment."

"A sustainable development must preserve the soil, the water, the genetic resources. It must be environmentally non-degrading, technically appropriate, economically viable and socially acceptable. But simultaneously, the conservation of the environment cannot appear in a restrictive sense. Our country needs to satisfy increasing needs of housing, health, education, electric power, etc. It implies the use of resources that it owns."

"It seems that underdeveloped countries face the dilemma of growing and simultaneously preserving nature. However, this dilemma is just appearance rather

than a real facts because with the adequate mechanisms it is possible to promote economic development and also to protect the environment." (Aylwin 1992: 6)

In parallel to the official wave of institutional modernization a critical approach challenges the connection between sustainable development and environmental protection in Latin America. Since the 1990s onwards, scholars from different countries in the region are proposing to read modernity critically from the perspective of unsustainability. Under the rhetoric of sustainability, dynamics of unsustainability are growing in the region, showing how ecological protection has been subordinated to economic development (Guimarães 1999, Guimarães et al 2011, Leis 1999, Escobar 1995). For these scholars a spatio-temporal change becomes fundamental. The local scale offers an alternative under the notion of "the politic of place".

"The discourse of sustainable development is being assimilated by economic rationality and the policies of nature capitalization, but the principles of sustainability are taking root at the local level through building new productive rationalities, based on cultural values and meanings, the ecological potentialities of nature, and the social appropriation of science and technology […] A new politics of space, place and being is being constructed starting from the sense of time [contained] in the current struggles for identity, autonomy and territory." (Leff, 2001: 29-38)[202]

In the above quotation, the Mexican sociologist Enrique Leff expresses the problem of the sustainability discourse when organized exclusively under the economic imperative. At the local level an alternative appears as part of the struggle by community to define autonomously their destiny. Sustainability emerges successfully from the politics of place, which is opposed to the global definition of territorial roles in natural and productive terms. The official environmental discourse, oriented exclusively to the future, impedes an approach at the local level as the suitable spatio-temporality to construct sustainability.

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[202] Translation by the author from the original Spanish texts: "El discurso del desarrollo sustentable está siendo asimilado por la racionalidad económica y por las políticas de capitalización de la naturaleza, pero los principios de la sustentabilidad se están arraigando en el ámbito local a través de la construcción de nuevas racionalidades productivas, sustentadas en valores y significados culturales, en las potencialidades ecológicas de la naturaleza, y en la apropiación social de la ciencia y la tecnología […]Una nueva política del espacio, del lugar y el ser está siendo construida a partir del sentido del tiempo en las luchas actuales por la identidad, por la autonomía y por el territorio." (Leff, 2001: 29-38)

b) The Preventive Capability as a Temporal Way to Avoid Social Conflicts

A second strategy to promote gradualness as the predominant discursive temporality is to strengthen preventive actions with the intention to avoid socio-ecological conflict. In order to discursively construct slow motion and gradualness, here a particular way to measure time is proposed. The argument runs as such, if it is possible to categorize a period in which social change, transformation or even revolution appear as an accelerated time, then a time span without conflict and transformation could be understood as decelerated. One of the main strategies used to construct gradualness, as a prevalent temporality, is to reject the existence of socio-ecological conflict in the discursive process to decelerate time.

A time span without socio-ecological conflict is not a realistic stage when processes of ecological modernization transpire. Then, the discursive construction of gradualness in the environmental legal framework is analytically connected with a depoliticization process in the society-nature relationship. With this perspective, the political narrative of prevention works discursively as a catalyst of socio-ecological struggle. When the political system proposes ecological education for children, it neglects the different positions toward nature that exist in society. Ecological education may be effective regarding pollution control and rational management of natural resources, but would certainly converge around a single to approach nature. The socio-ecological struggle exceeds the two phenomena described, and no political action can prevent this conflictive dimension involved in the society-nature relation.

Furthermore, the political system proposes not only education, but also environmental sciences in its natural and social variants as a way to prevent dispute. Unfortunately, this process erases political discussion, argumentation and agreement from the environmental legal framework. Nobody seems to be aware of the facts that social-ecological struggles are becoming one of the central forms of the social conflict nowadays as is expressed by Ulrich Beck (1992). The next quotation of the presidential speech, as many other in the text, shows how explicit the official discourse is in avoiding the conflictive nature of the society-nature relation. In other words, how wrong is the official discourse in conceptualizing ecological education as a possible way to reduce socio-ecological conflict. The thesis argument proposes the

opposite; if more people are aware of the environmental crisis then alternative and different positions to tackle the problems arise. In a context of multiple positions toward nature, stabilized non-contested social orientation for action is practically impossible.

"At first instance, the environmental education emphasizes the need to educate the whole population, but principally the children and the youth in relation to environmental problems. The most effective way to anticipate the emergence of environmental problems lies in behavioral changes of the population. It is a long term task that is fundamentally developed through the incorporation of content and environmental practices in the educational process." (Aylwin 1992: 14)

Rather than accept the notion of prevention as an incontestable technocratic tool the argument proposes to raise the preventive principle as a way to introduce the temporal variable within the depoliticization process. It is not only the acceleration and the shrinking of time for political deliberation that places the democratic systems under risk. In some variants of democracy, characterized by low level of social representation, tendencies to decelerate the social conflict lead to de-democratization processes. This argument will be furthered in order to better illustrate how temporality and spatiality are re-structured. With independency of the sense and orientation expressed by spatio-temporal restructuration, in the form of deceleration/acceleration and territorialization/de-territorialization, the focus is made on the orientation given to social representation and action.

The following presents an extended quotation from the Presidential Speech showing the rendering of the preventive principle. The intention is to highlight: fi) how the preventive principle changes the spatio-temporal condition of the political answer to the ecological crisis, and ii) how some legal mechanisms are proposed in order to tackle specific dimensions of the environmental problematic.

"The preventive principle tries to avoid environmental problems. It is no longer possible to continue with this environmental orientation where environmental problems are attempted to be overcome once produced […] The project of law creates a monitoring system of environmental impact. By virtue of this, every project that has

environmental impact should be under this system. It is constituted in two types of documents: the declaration of environmental impact - those projects which environmental impact is not of great relevance- and the studies of environmental impact - the projects with environmental impact of great importance-. On the grounds of the abovementioned system and before the elaboration of projects, all measures will be designed that attempt to measure, minimize, or even reject environmental impact […] The third instrument is constituted by the preventive plans of pollution. By virtue of this tool, in those zones that are close to exceed the procedures of environmental quality, the authority should create or demand a prevention plan of pollution in order to avoid the violation of the regulation." (Aylwin 1992: 14-15)

With the intention to better approach the notion of de-politicization as a democratic risk from the perspective of spatio-temporal restructuration, the idea of right time or "timing" should be reconsidered. In the political deliberation, timing may function as a positive temporal coordination between actors, in the same way the lack of timing represents a way to avoid confronting social conflict. De-politicization may occur through temporal acceleration as "there is no time for discussion and agreements, action is required right now". On the other hand, de-politicization may exist as a form of temporal deceleration when "there is plentiful time; no deliberation process is required, because no claim will last forever". The last sentence reflects one strong capacity of the political system for negotiating with social movements. By no taking measure, and waiting longer periods of time, the political system diminishes the original strength and support of the social movement.

c) Accumulative And Gradual Temporality in the Environmental Phenomena

The central mechanism for promoting a temporality oriented to gradualness is to homologate the slow motion, accumulative ecological damage with a gradual slow-motion response to the political system. The political system proposes this homologation when saying "because slow was the process to damage the environment, slow should be the social answer". Perhaps this statement does not call for all the attention needed in the public debate. Nonetheless, it is especially pervasive since it allows the political system to deploy two strategies: i) to maintain the so called "rules of the game" and to deliver the information to the economic sector that no changes will occur resulting from environmental problems in the short run, and ii)

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to allow economical speculation inside the temporality of environmental regeneration. The following quotation from the presidential speech shows how gradualness is rendered as a pattern of continuity in the exploitation of nature after the enactment of the new environmental law.

"Thirdly, the project has gradualism as its inspiring principle. Under these evaluation procedures of environmental impact the project does not try to demand, from one day onward, the most demanding environmental standards or to subjugate all those activities in the country without taking into consideration their size. Also, it does not try to contain all the environmental dispositions that are necessary to create. On the contrary, the intention is to begin a process of environmental regulation, which is the first step, but there is still too much to do." (Aylwin 1992: 16)

The gradualness in the case of the Chilean framework is considered as one of the main principles of the environmental law. Nevertheless, it is important to reflect to what extent something like a gradual temporality could be a principle to follow within the legislation. Trying not to deliver a normative response to this question, it is possible to recognize two meanings assumed by the notion of gradualness in the presidential discourse. On the one hand and in opposition to the idea of short run, gradualness is connected with the notion of the long run, stability and security. The concept is used as an adjective to qualify a particular form to implement a social process. On the other hand, the concept is presented as a substantive, where gradualism signifies a particular orientation to social action. This orientation allows deploying responses to the ecological problem in the same way that they are articulated, i.e. slowly.

Gradualness and gradualism are corner stones in a particular narrative that make sense of the total trajectory of ecological degradation. A certain form of economic development, in which the environmental variable was not included, characterizes the past. Today the environmental variable is considered in economic processes but the socio-ecological questions have been reduced to constraints in the economic equation. As discursive result, there is a promise of a future in which development and environmental protection are conciliated. The new environmental rhetoric will stress the slow-motion temporality in three dimensions: i) environmental degradation in the

form of accumulative effect, ii) exploitation of natural resources in the form of sustainability, and iii) the political system's response to the ecological crisis in the form of long-run measures. Together the congruence of these three temporality emphasize the time required for ecological regeneration as a key feature of the economic system in order to operate under the imperative of growth, even in conditions of ecological diminishment. The following extracts from the presidential speech shows discursive gradualness as a devise to harmonize the socio-ecological conflict.

"Environmental politics follow the governing principles and the basic goals that the country tries to reach in environmental matters. It harmonizes these with the economic, social and development policies. One of its characteristics is gradualism. The environmental problems that the country suffers are the result of decades of these policy applications where the environmental topic was not a relevant aspect. For that reason, reverting the course of environmental degradation and looking for ways in which development and progress work together with the conservation of environmental heritage, need structural modification that transcends the measures in the short term." (Aylwin 1992: 48)

A relevant consideration could be extracted from the revision made by Nicolo Gligo (2006) of the project conducted by ECLAC "Estilos de Desarrollo y Medioambiente en América Latina" (Forms of Development and Environment in Latin America). In his article the author reintroduces the concept of "environmental sustainability" as the real horizon for every form of development. The Chilean agronomist presents two characteristics of environmental conservation that are opposed to the temporal re-articulation described above as gradualness. Firstly, ecological sustainability is achieved when the output and input of material, energy and information in an ecosystem are equal. A negative balance between both will irredeemably destroy the system. Second, it is fundamental to recognize the temporality required to maintain ecological sustainability. The short-run as well as the long-run provide information of the stability/instability of the ecosystem. Giglo's argument challenges the commodification of nature because environmental sustainability articulates different temporalities in the active protection of ecosystems. The narrative of pure extraction

of resources is no longer possible as an orientation for action, even when resources are saved for a future generation.

"A strictly ecological definition of sustainability which was given in the early eighties poses it as the ability of a system (or ecosystem) to maintain a constant state in time, consistency, which is achieved either by keeping the parameters of volume, rates of change and movement unchanged, either cyclically fluctuate around average values." (Giglo, 2006: 16)[203]

At the end of this section I want to propose to the reader a particular connection between the discursive construction of a prevalent territoriality and temporality in the socio-ecological conflict. Global narratives in the spatial dimension are acting together with gradualness in the temporal dimension. Even when this spatio-temporal restructuration is organized by the global system or earth-system studies aimed at protecting the environment, the economic orientation of sustainability may colonize this discursive representation in order to strengthen the commodification of nature. The political system promotes this spatio-temporal restructuration though not as a form meant to protect nature. On the contrary, the discourse analysis shows the presidential speech to promote economic growth over environmental protection.

A Spatio-Temporal Dispositive: Equalization of Diagnostic and Solution in Material Environmental Issues

When Foucault discusses the notion of dispositive (*dispositif or apparatus*), he does so in different fashions. One of these orientations is to understand dispositive in a very broad conceptualization as "heterogeneous ensemble of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions" (Foucault and Gordon 1980: 194). Foucault resumes his theoretical intention under the formulation: "what is being said as well as unsaid". This orientation is in many ways the strategy

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[203] Translation by the author from the original Spanish text: "Una definición estrictamente ecológica de sustentabilidad fue dada en el decenio de los ochenta planteándola como la capacidad de un sistema (o un ecosistema) de mantener constante su estado en el tiempo, constancia que se logra ya sea manteniendo invariables los parámetros de volumen, tasas de cambio y circulación, ya sea fluctuándolo cíclicamente en torno a valores promedios."

he follows in the "History of Sexuality" (Foucault 1990) where he addresses the study of the over-all discursive fact. A second orientation identified under the notion of dispositive, "the nature of the connection that can exist between these heterogeneous elements. Thus, a particular discourse can figure at one time as the program of an institution, and at another it can function as a means of justifying or masking a practice which itself remains silent, or as a secondary re-interpretation of this practice, opening out for it a new field of rationality" (Foucault and Gordon 1980: 194).

In the following analysis the second variant of dispositive will be use to analyse environmental law. The notion of dispositive allows observation of interconnecting, different and heterogeneous discourses to consolidate the speculative and economic rationality in the environmental sphere. The central element in this "ecological dispositive" will be its explicit spatio-temporal condition, and its relevance will rest in the discursive connection promoted between the cognitive and normative dimension of the socio-ecological conflict.

If we agree with Hajer that making a social issue from an environmental phenomenon involves: formulating the description as something problematic, and additionally, to open possible responses up to what is formulated as critical (Hajer 1995). It then becomes easy to note the ecological dispositive fulfills this function. In other words, the ecological dispositive discursively equalizes an ecological problem with the social response through mediation of the political system.

Equalization is not about all possible dimensions of the environmental crisis and social responses. The focus of the analysis is regarding the equalization of the temporal and spatial dimension. As was noted above, the presidential speech is very explicit in harmonizing the spatio-temporality of the ecological crisis at the level of the problem and response. The spatiality of the crisis is at the global scale, and its temporality has been accumulative, it is a universal crisis slowly formed. The political system's response in this scenario is: "tackling the ecological crisis should be done in the same way that the crisis emerged, meaning a global reaction applied gradually".

In this formulation the congruence between problem and response is temporal and spatial. In the spatial dimension the ecological crisis faces a problem of global

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character, which it is not distinguished between national frontiers. Of course, the response emerging from the National State cannot be easily achieved at the global scale because the legal corpus refers to gradualness in the application of environmental standards, and the temporal orientation becomes prominent over the spatial ones. Nevertheless, as a narrative construction, it is essential to highlight the integration of the spatio-temporality of the problem with the spatio-temporality of the solution.

As it is possible to see, there is no logic, material, or social reason why the spatio-temporality of the ecological crisis should be replicated by the political response to it. Furthermore, it is just a mistake. Nevertheless, mistakes in the political realm are more critical junctures of interest, associated with specific social groups, more than just errors. However, it is necessary to explain why this particular equalization is a deficient measure.

Starting with temporality, the first thing that attracts attention is the discursive conciliation of the very obvious difference between the rhetoric of an urgent environmental crisis from one side, and the intention to propose gradual measures, on the other. In any case, this connection opens very complex social issues. Anyone who forgets to close a water tap before going on vacation, once back, will claim that because the problem was cumulative, just a few drops an hour, gradualness will be the reaction. But of course, social problems are more complex than this. For social problems, coupling of temporalities of problem and solution look more plausible, for example, when we think about addictions. Quitting certain addictions could be a matter of reducing consumption in the long run. But this is only a social case for the simple tobacco and cigarette addictions, whereas in fact, many people argue it is possible to quit by smoking less everyday. Nevertheless, this is not the case of alcohol or another kind of narcotics; no one would agree with the idea of being less drunk sometime in the week, in the month or even in the year as a way to fight this sickness. In the case of the ecological crisis, the specific form to understand gradualness is to repeat the temporality –duration- of the problem consolidation inside the social answer. In the official discourse the environmental problem emerges as a consequence of specific forms of production, which have been taking place for

decades or centuries, and is the reason consolidating a different way of production will take years.

As proposed in the previous paragraphs, there are many different forms with which to understand gradualness and not one of them should be taken for granted. Some particular cases of environmental problems are gradual in their consolidation and effects, however not all. For this reason the political system should deliver a more plausible argumentation to promote gradualness as the form of social response. For the Chilean ecological crisis equalization is by no means a necessary answer.

Furthering the discussion to the territorial appears disturbing for the fact that the national legal corpus makes so many references to the global scale to legitimize its action. This is because accounting domains for government action are the local, regional, or at most, national level. How is it possible that the environmental law in a country continuously uses references to the global interconnection of the ecological crisis to create social consensus. Of course, the global scale gives orientation to the national level, but the environmental problems did not come about from the global level only. Environmental problems, even when they could reach the world at large, emerge from the local level by specific actions that impact every local scenario in a differentiated fashion.

In fact, to ask the question of the correct scale of intervention is not irrelevant. Global environmental problems could be understood as the derivation, through accumulation, of problems at the local scale to other higher levels. Global environmental problems are constructed at the local level, and the solutions require some forms of articulation at this territorial level. No researcher or politician facing problems of poverty in a country will be satisfied to know only the national magnitude of increase or decrease of this indicator. Especially in the cases when the diminution does not reach a high level. For the case of poverty it is more or less expectable that all are concerned with the spatial distribution of poverty reduction or increase. Poverty concentration in specific areas becomes as relevant as its total amount. The same applies to the environmental problem. The answer should be global but only as an accumulation of actions at the very local level.

It has been discussed how the global scale of the environmental crisis is constructed by action at the local level. Starting from this point it becomes easy to sustain that the dispositive of equalization of the ecological problem and political response has not been sufficiently questioned by social research. However, I would like to go further into some possible implications of this particular matching made in the ecological legal framework.

The spatio-temporality structured by the political sphere in Chile is not the same followed by the majority of socio-ecological conflict. Perhaps some of them are accumulative and expressed at the global scale, but in general ecological problems are spatio-temporally organized at the local scale. Examples of local socio-ecological conflict in Chile are: i) air pollution in big metropolis, ii) contamination of earth, water and air associated with mineral extraction in the north, iii) depletion of native forest in the central south, iv) and mobilization against forms of energy production or raw material extraction in extreme areas like the Patagonia or the Andes Mountains.

With this information derived from the historical context of environmental law in Chile, it is possible to postulate that the spatio-temporal equalization of ecological crisis and response has vast repercussions. The improvement of environmental quality is not an outcome of this political strategy. On the contrary, the equalization seems to be connected with the increasing process of nature's commodification. Spatio-temporal restructuration has been organized around the regenerative capability of nature. Ecosystems are defined in terms of their capability to resist human uses, and the spatio-temporality in which they regenerate their own components becomes the central interrogation of the process of production. Further on, the analysis proposes that the spatio-temporality of nature's regeneration becomes the last possible frontier for economic rationality. This rationality will be deployed at the global scale and will exacerbate the speculative process over nature in order to better define a territorial role division. Areas around the world will be defined in order to fulfill particular requirements of global processes of production, such as: innovation, production, deposit, extraction, contamination, and decontamination. Some places could be seen as efficient regions for contamination, while others as efficient for deposit of waste. However, nowhere does the question for another mode of production emerge, in order to become sustainable in environmental terms.

My reading of the presidential speech of 1994 and the introduction of the law "Environmental Bases" highlights the stabilization of a spatio-temporality connected with the extractive orientation of the Chilean mode of production. At the same time, it stresses the connection with the spatio-temporality of the environmental regeneration as the main form in which economic sustainability will be understood in Chile for the next two decades. The emergence of this form of spatio-temporal representation should be interpreted not as a false description of the reality; a better metaphor is the idea of spatio-temporal "intermezzo". The spatio-temporal equalization of environmental problem and response creates a sort of "in between" condition. It is a period of time in which the previous organization is gradually abandoned but the novel standards do not yet apply. The social relation with nature in that moment relies on a comfortable position between "the active use of nature" and "the passive wait for regeneration" in which no real ethical judgment is possible. This is the discursive context of the de-politicization process of socio-ecological conflict in Chile. After 1994, environmental problems are interpreted just as the correct way to extract raw material for an international market or the satisfactory level of pollution to avoid damage to population. No social conflict is recognized as a legitimate part of the debate around the society-nature relationship. In the following section the parliamentary discussion is revised to describe the level of social agreement/discrepancy regarding representation and response to the ecological conflict.

11.1.2.- Commission Discussion Law N°19.300 / 1994

The parliamentarian discussion of the first Chilean Environmental Law is addressed with focus on the senators' discussion that occurred in the Finance and Environmental Committee in 1993. In short, I will justify this selection by the major relevance of the discussion over other forms of parliamentarian deliberation like the deputies. In another dimension, I will propose that methodologically these two committees should show a large spectrum of variability, since the financial commission could be closer to an economic orientation, while the environmental commission could be nearer to a conservationist perspective of nature.

The parliamentary discussion has the possibility to show levels of social consensus-dissensus regarding the way in which the society-nature relationship was performed in Chile from the 1990s onward. In this context it is important to capture the way in which the senators discuss: i) the principles proposed in the presidential speech, ii) the environmental definitions proposed in the factual law, iii) the legal mechanism used to define a social understanding of pollution and a material relation with the environment as resource.

The analysis will proceed by highlighting emerging themes, which are discussed by the two commissions. Using critical discourse analysis four themes have been highlighted in the parliamentarian discussion. These themes have the possibility to host the similarities as well as differences between the two commissions. At the same time, the four themes will bridge the analysis between the parliamentary discussion and the other two resources of information: the presidential speech and the factual law.

In the following the analysis will be presented in detail, organized as: i) guiding principles of the law in the form of education, gradualism, realism and preventive character, ii) the constitutional role of the environmental law in regards to other constitutional guarantees and rights, iii) the legal definition of contamination and its implications and, iv) the notion of sustainability and development as milestone in the environmental law.

a) Guiding Principles of the Law in form of Education, Gradualism, Realism and Preventive Character

One central piece in the parliamentary discussion it is the reference to the principles proposed by the executive power in the introduction of the law in 1992. In this sense both commission dealt with the idea of ecological education as a central piece in the environmental legal framework. Education is seen as a fundamental element in order "to prevent the emergence of environmental problematic". Even more the research of environmental phenomena will be portrayed as contributing to this aim as well. The following two quotations show the description made by each of the commissions. In both speech environmental problems it is framed as a consequence of the population

action and not as a social process in which diverse actors contribute differentially or unevenly.

"This emphasizes the need to educate all people, especially children and youth in relation to environmental problems. The most effective way of preventing the emergence of environmental problems consists in changing behaviors in the population, a long-term task that can only be achieved by incorporating content and practices in the educational process." (Environmental commission 1993: 51)

"Permanent changes of behavior of our people towards the environment have as a starting point the educational process. This should incorporate content, practices and learning skills aimed at understanding and awareness of environmental problems, as well as the development of behaviors and habits designed to prevent and resolve, the issues addressed […] Research, meanwhile, also contributes effectively to meeting the objectives described." (Financial commission 1993: 147)

Both commission appeal to changing "behaviors" or "conducts" of the whole population in order to avoid the environmental conflict. The argument does not contradict the need to deploy a learning process to the population with the intention to improve the quality of the society-nature relationship. Neither, does it avoid an unrestricted use of nature performed as waste deposit and as source for raw material and capital resources. On the contrary, the analysis seeks to show that the process of education will increase the probability of environmental conflict. Education informs conservationist positions in children and youths that clash with the predominant way to perform hegemonic relations between economy and nature. The educational orientation contained in the law functions as dispositives, which intend to dissolve or blur the uneven social character of all form of ecological conflict. For example, all social actors do not equally produce pollution; but the reference here is to an abstract notion of national population who will play the same discursive role as the humankind referred to in the presidential speech.

A second principle addressed in the parliamentary discussion is contained in the notion of gradualism-realism as orientation law. In both commissions there was a broader agreement to tackle the environmental conflict in a gradual manner, and this

complemented the idea of being realistic regarding the possibilities of control, given the limited amount of economic resources. Gradualness is invoked in the environmental commission is as a way to slowly, during the upcoming decades, to revert environmental damage; and due to the magnitude of the issues realism is assigned as achievable goals. The following quotation shows the articulation of these two notions within the legal mechanism formulated in the law. At the same time, the quotation reflects the spatio-temporal framing of the environmental ecological crisis as extended in the spatial dimension and slowly consolidated in the temporal.

"In fact, the institutionalization of environmental issues in the public sector, the review and enactment of sectorial rules, the educational process aimed at changing attitudes towards the environment, can only be implemented gradually. Stop and reverse the process or environmental deterioration will take decades; during which all sectors must make their commitments [...] A second characteristic of environmental policy must be realistic. Its goals should be achievable, taking into consideration the magnitude of the environmental problems [realistic about the] time and manner in which they intend to address them and the resources and means that are approved to do so." (Environmental Commission 1993: 48-49)

In the financial commission there is an explicit reference to gradualism and realism as the only way to progressively advance solutions to the ecological conflict. Here again, as was presented in the presidential speech, the equalization between problem and response became the manner to tackle the ecological crisis. In the case of the financial commission, an important element would perform gradualism and realism as preeminent characteristics of modern management. Realism as an approach becomes necessary not for the magnitude of the problem but for the limitation of economic resources to act.

"[…] the idea of legislating on the subject as well as the content of the project reflect the realism and gradualism under which the issue should, in his view, be faced, since the environmental problems cannot be solved without a strategy that considers gradual and programmed progress." (Financial Commission 1993: 146)

In the environmental commission realism was introduced by displaying how other environmental legislation in Latin America has become inapplicable because of its high level of complexity. In the financial commission the reference was to the USA and the large difference of monetary resources involved in the application of the environmental policy. The conclusions of both commissions are clear, Chile should reduce its environmental target because: i) higher level of environmental protection involve increasing complexity, and ii) in an international comparison, the country provides a smaller amount of economic resources to implement environmental policy

The support given by the two commissions was central to enacting the equalization of the environmental problem and social solution proposed by the executive power. This discursive dispositive oriented the ecological policy from the 1990s on, excluding every socio-ecological conflict that cannot be framed in terms of "slow and gradual consolidation". Examples of environmental problems that cannot be organized in these terms are the human and social consequences of extractive processes like forestry and mining. They require other kinds of action to be solved since they monopolize all productive inputs: land, water, energy, and labor. A third element playing a role in this discursive constellation is the preventive character given to environmental law. The capability of the law to anticipate and avoid the ecological struggle is proposed as a central feature of the modernization process.

"[...] System of Environmental Impact Assessment. This management tool is widely applied in most advanced countries in the field and is the best example of the preventive manner with which the management tools are cover." (Financial Commission 1993: 147)

The preventive character of the policy instruments enacted to assess environmental impact is only capable of articulating this principle in the short run, but their capability to stabilize conflict in the long run is not clear enough. For example, the ecological pressure exerted by the mining industry in the Atacama Desert over the water resources cannot by addressed by the environmental impact assessment. This situation has historically damaged human settlements in the region and the availability of water resources for the rural and urban population. The same is the case of forestry activity and its responsibility for the eviction of the Mapuche population from their

ancestral settlements due to pressure exerted over land use in the center south of the country.

b) The Constitutional Role of the Environmental Law Regarding Other Constitutional Guarantees and Rights

The environmental law, as was explained in the historical revision, finds its base in the 19th and 20th article of the Chilean Constitution as "the right to live in a pollution free environment" and the right to demand every person respect this, and private or public organization. In order to orient its application from the 1990s onward both commissions addressed the constitutional right.

The environmental commission organized a reading of the Constitution citizen's right to live in a free pollution environment. The ecological protection is recognized in addition as a form of national sovereignty. In the preservation and enrichment of the national environment, the State executes not only its duty but reinforces it social authority as well.

"For the constituent the social function of property as required includes the general interests of the nation, national security, utility and public health, and the preservation of environmental heritage." (Environmental Commission 1993: 57)

Without much surprise the financial commission will read the constitutional right to dwelling in an environment free of pollution in opposition to the constitutional right to develop economic activity. The intention of the commission was to avoid an explicit contradiction between both rights, though this transpired with a low degree of success. Therefore, it is assumed from the beginning that rigor of environmental law will conduce standstill of economic activity.

The need to avoid a collision occurs between fundamental rights consecrated by the Constitution and the Republic, such as the right to live in an environment free of contamination and the right to develop any economic activity. (Financial Commission 1993: 151-152)

Another variant of the discourse appears when the commission proposed that high pollutant companies bereft of economic revenue tend to disappear because they are not able to adapt to the new standards of environmental protection. In other words, stabilization becomes possible by market mechanism, which only allows the survival of the better enterprise in the economic and environmental performance. This is not easy to prove and their discursive powers rely in the colonization of the political discussion by economic dogmas. This argument will be used again in the critical discourse analysis of the Chilean environmental law of 2010 where ecological problems are being explained using economic metaphors.

The discursive constellation shows an orientation towards environmental protection as a form of national sovereignty, and at the same time as a limitation to free economic activity. This understanding exactly will be present in the discussion that emerges to create discursively the legal definition of pollution and contamination. The environmental commission focuses on the construction of pollution levels, an organization of spatio-temporality in which a determined form of contamination is considered latent or saturated, for particular ecosystems. The financial commission orients its effort to determine precisely the form and extension of restriction to economic activity whenever a zone is defined as latent or saturated contamination.

c) The Legal Definition of Contamination and Its Implications

The environmental commission makes a case by rendering pollution as the combined action of levels of pollutant concentration and the duration of occurrence. Here concentration could be easily translated to "spatial concentration", and "duration of occurrence" to temporal influence of a pollutant. It becomes clear that contamination has been defined within a particular re-articulation of time and space.

Considering that the factors of concentration and time do not act in isolation from one another, but converge in various combinations between them in the environmental reality, its writing was improved in order to make this distinction clear. (Environmental Commission 1993: 66)

Concerning the financial commission it is also possible to argue that a spatio-temporal re-articulation is proposed. This commission is especially interested in responding to

the questions: to what extent (space) and for how long (time) will economic activity be restricted with the intention to recover an area defined as polluted in latent or saturated form. The following quotation expresses the possibility to limit private property rights for environmental protection requirements. This situation is only possible when the levels of pollutant exceed the concentration defined for saturated areas. The limitation to the economic activity is possible under Chilean law, but it is framed only in cases of emergency. This situation rejects the fact that vast areas of the country have reached this level in the past and have carried on in such conditions as a normal form of production.

When reaching the levels of environmental pollution that give rise to situations of emergencies under the provisions of Article 24 measures shall be applied that may include some or all of the following specific restrictions on the exercise of constitutional rights as listed:

-The right of property regarding the use of motor vehicles, in whole or part of communes and regions that are designated and for the periods and the procedures regulated by the governing authority;

-The right of assembly, carried out in squares, streets and other public places in the days and hours that, in each case, adjust the competent authority;

-Freedom to work, carried out by business, industry, tasks or activities that produce or could increase pollution, restriction to keep the days, hours and with the modalities established by the governing authority, and

-The right to develop any economic activity, when engaged by companies, industries, tasks or activities that produce or could increase pollution in the days, hours and with the modalities established by the governing authority [...] The restrictions adopted under the two preceding articles, shall not extend beyond the emergency situation. (Financial Commission 1993: 184)

This discussion reflects the social struggle to define a particular spatio-temporality as the preponderant to organize the society-nature relationship. Which will gain hegemony to regulate the ecological conflict: will it be the articulation of time and space in the form of "economic restriction" or in the form of "environmental recovery"? This question should be answered in a historical way for every society. Nevertheless, the arguments present an observation of how the ecological conflict

could be rendered as a battle for making one or another spatio-temporal structure preponderant in the interpretation of a highly complex and even contradictory concept like "emergency". The economical restriction seeks to render the notion of emergency as transitory and possible only in the short-run by appealing to the idea of exceptionality contained in "emergency". The regeneration of nature could be seen as a longer process and deployed in the long-run. In this case "emergency" was rendered as dangerousness and not constrained to the short-run. Following the notion of "emergency", and going deeper into legal analysis, focusing on a definition of "latency" is proposed. Unfortunate to the objective of environmental protection, the legal rendering of a latent area of pollution is very lax in its capability to regulate the ecological problem. This condition will be explained in the next section.

d) The Notions of Sustainability and Development as Milestone in the Environmental Law

The notion of sustainability in itself does not show a reinterpretation by the environmental or financial commission. Sustainability in its formulation as "economic sustainability" i.e. a rational use of natural resources ensuring its permanence for next generations, becomes preponderant in the parliamentary discussion. Striking is the low level of criticism applied to the concept, especially from the environmental commission. With the intention to illustrate this situation, the following quote shows how this commission agrees with the idea to implement the notion of "sustainable development".

The abovementioned ombudsmen agreed with the importance of appropriate legislation for environmental issues and to this effect the overall and positive evaluation that the project deserves. It is aimed at so-called "sustainable development", a concept for which each country must find the exact equation between development, environmental stewardship and social equity. (Environmental commission 1993: 60)

Sustainable development appears as another dispositive to reduce the social conflict around the form of society-nature relationship. The entire deliberation process of Chilean environmental law is crossed by a subtle and highly abstracted intention to achieve social consensus without social discussion. Different opinions and interests

are not confronted. They are regulated under abstract economic principles. Social consensus regarding the relation with nature was shared only among politicians and economic entrepreneurs,. Evidence of this is the re-emergence of indigenous conflict, the social movement and the opposition to almost all forms of mega-projects oriented to extractive activity in the country. The next quote, again from the environment commission, expresses the need for social consensus expressed by the political system in order to obtain legitimacy for the environmental law.

Given the importance of the matters covered by the project and its influence on the socioeconomic system of the country, the committee considered it essential that their content reflect a broad consensus among all sectors and the different opinions inherent to living in the country. The aim is to generate the necessary conditions of social legitimacy. (Environmental commission 1993: 62)

The critical discourse analysis shows that in fact there is no social consensus around the environmental law. In contrast, the parliamentarian process constantly promotes discursive dispositives to fulfill this gap. In the following the factual law will be addressed and connected with the two previous analyses of the presidential speech and the parliamentary discussion.

11.1.3.- Factual Law N°19.300 / 1994

The factual law, approved on the 1st of March of 1994 as the "Environmental Bases", enters into parliamentary deliberation on 1992 and suffers from a group of modifications in its process of enactment. The analysis proposed here will approach the legal corpus to highlight two dimensions: i) some basic definitions that render particular forms of society-nature relation and, ii) some legal mechanism deployed in order to deal with the anthropogenic environmental impact of new enterprises. These two dimensions together will have the power to construct particular forms of social truth about nature, following the formulation of Foucault (1985) in "La verdad y las formas jurídicas"[204]. Here I express one substantial characteristic of the critical discourse analysis, only possible in analytical terms, applied to the factual law, and that is, the distinction between legal definitions and legal instruments. The

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[204] "La verdad y las formas jurídicas" in English "Truth and Judicial Forms" is a publication resulting from five conferences given by Michel Foucault in Río de Janeiro Between the 21st and the 25th of May in 1973.

implementation of the law requires some definition in the same way that definition acquires legitimacy when applied in different forms of assessment. This double relation is what I wish to explain more in detail in the following.

A first step into analysis of the Chilean legal environmental corpus should distinguish between different types of definitions, which function as milestones for the consolidation of the society-nature relationship. Here it is possible to differentiate at least three sub-dimensions: i) the overall notion of contamination from an anthropogenic perspective, ii) the area of differentiation regarding levels of pollution from a spatio-temporal redefinition, and iii) the articulation of conservation and sustainability in the context of an extractive orientation. In simple words, the argument expresses the fact that the environmental law of 1994 rendered contamination by allowing constant levels of pollution when no injury over the population is demonstrable. This understanding of the environmental "status quo" as already polluted becomes a central shift in the discursive organization of ecological policy in Chile. This strategy requires reinterpreting the constitutional right to live in an environment free of contamination. The spatio-temporal restructuration contained in this process deserves special attention.

The second dimension of analysis will address some legal instruments or mechanisms presented as the appropriate way to deal with socio-ecological conflict related to the environmental law. These instruments could be analytically differentiated as: i) mechanisms to assess environmental impact, ii) mechanisms that define the "norm" of environmental quality, and iii) mechanisms regarding social participation and ecological education. In the following it will be explained how these three mechanisms are connected and reinforce processes like environmental compensation, the anthropogenic impact measure, and socio-ecological de-politicization. In an overall perspective, the argument points out how these instruments are articulated in terms meant to avoid socio-ecological conflict, which are beyond the problem of pollution and resources extraction.

Socio-Ecological Definitions in the Environmental Law

In the following, three types of definitions regarding the society-nature relationship are addressed. Beyond the legal necessity of stabilizing specific phenomenon and concepts to deal with the regulatory function of the environmental law, the definitions proposed are contingent. From this perspective the environmental law contains a heterogeneous articulation of action orientation. This situation derives a contradictory articulation of orientation within the political sphere. The proposal is to understand three main definitions of nature that organize the ecological arena: i) nature defined as already polluted, ii) with different level of pollution regarding spatio-temporal frameworks and, iii) where ecological conservation means use of natural resources.

a) The Ecological Arena as Already Polluted

Under the notion of an environment presently polluted, a set of definitions considered in the environmental law is analyzed: i) pollutant, ii) pollution, and iii) pollution-free environment. At this point it is relevant to note that the original law proposal of 1992 did not consider the notion of "contamination", which was added after different parliamentary discussions. With regards to the notion of "pollutant", the last formulation has incorporated an explicit turn to "human health" as way to measure contamination. In a similar fashion the notion of "pollution-free area" has excluded reference to an environment lacking the presence of pollution as a possible reality.

"Pollution-free environment: one in which no contaminants are found or are present in concentrations or in periods lower than those that may affect the health of people or alter the composition, properties or the natural behaves of environmental components." (Law proposal 1992: 20)

"Pollution Free Environment: one in which the contaminants are at concentrations and periods below those that may constitute a risk to the health of people, the quality of life of the population, the preservation of nature or the conservation of environmental heritage." (Final Law 1994: 1191)

It is possible to argue then that the environmental "status quo" in the process of Chilean ecological modernization is the presence of certain level of contamination. From another side, the concept of contamination legally exists only with reference to endangerment to human health and not necessarily with reference to negative effects over particular ecosystems and local communities.

"Contaminant: any living or inert substance, form of energy or combination resulting from human activity, whose presence may alter the composition, properties or natural behavior of environmental components." (Law proposal 1992: 19)

"Contaminant: any element, compound, substance, chemical or biological derived, energy, radiation, vibration, noise, or a combination of them, whose presence in the environment, at certain levels, concentrations or periods of time, may constitute a risk to the health of people, quality of life of the population, the preservation of nature or environmental heritage conservation." […] Contamination: the presence in the environment of substances, elements, energy, or combination of them, in concentrations, or concentrations and permanencies above or below, accordingly, to those established in current legislation (Final Law 1994: 1190)

These two transformations to the legal framework, which are incorporating the explicit reference to the human health and the legal established level of pollutant to define contamination, are very important in framing the environment as modifiable by human activity. The new conceptualization of "contamination" requires defining territorial and temporal limits of influence of certain "pollutant" as dangerous for the human body. In other words, determination of precise levels of contaminants that imply risk to society involves a complex definition of time and space. Through this shift the capability of the environmental legal framework becomes increasingly uncertain as an effective tool for the protection of specific ecosystems.

b) The Level of Pollution as Spatio-Temporal Rearticulation

The notion of pollution rendered as a particular level of concentration of a substance, incorporated by human activity or not, requires the definition of a particular area and a specific time span for measurement. In this context the legal definition of latent and

saturated zones, in regard to the concentration of a particular pollutant, becomes central for the analysis.

The Chilean legal framework will define an area as saturated when the concentration of a pollutant overcomes 100% of the level prescribed by the environment norm. In the same way, a latent zone will be defined when the concentration level of the pollutant achieves 80% of the concentration defined in the norm.

"Latent Zone: that in which the measurement of the concentration of pollutants in the air, water or soil is between 80% and 100% of the value of the relevant environmental quality standard, and […] Saturated Zone: that in which one or more environmental quality standards are exceeded." (Final Law 1994: 1192)

An essential element of this definition is the lack of a spatio-temporal framework to analyze and predict the fluctuation of pollutants in a particular ecosystem. Therefore latent zones are can be considered as already saturated. It is highly improbable that when the level of 80% pollutant concentration is achieved 100% will not be soon reached. Following CO_2 emission trajectories of the world, at the Toronto Conference "The Changing Atmosphere" of 1988, industrialized countries proposed a voluntary reduction of CO_2 emissions of 20% by 2005. Nevertheless, in 2009 at the "UNFCCC Copenhagen 15th Conference" not only there was no reduction but CO_2 emissions had increased 41%.

Coming back to the definition of saturated and latent zones, the increase of a 20%, which signifies a pass from one category to the other, is a very weak requirement. Even if more data are required to strengthen the argument, the elevated probability and high number of locations where this transition in fact took place can be easily concluded. If the law requires defining territories and time spans where a pollutant is dangerous for human health, the practical implementation of environmental evaluation also requires spatio-temporal references to define contamination levels and areas.

c) Conservation as Use of Natural Resources

A third set of definitions involved in the Chilean environmental law is related to the notion of "conservation" and "sustainability". In the first case, astonishingly, in 1992 the law considered conservation, in fact, to signify the use and exploitation of natural resources. The reformulation of the 1994 law will not change this substantively but incorporates reparation of damaged ecosystems as part of environmental protection. But reparation is applied to ecosystems considered as special, unique or with representative characteristic. Another important change is the inclusion of the adjective "rational" in order to describe a use of nature, in other words, to make profit without jeopardizing regeneration.

"Environmental Heritage Conservation: the use and rational exploitation or repair, in each case, of the components of the environment, especially those specific to the country that are unique, rare or representative in order to ensure sustainability and regeneration capacity." (Final Law 1994: 1189)

In the case of sustainability this will be included in 1994 as a way to specify the previous definition of development. In the year 1992 the idea of development as an improvement in the quality of life of all the world or human society was proposed. The main characteristic of this definition was the idea of social equality and the conservation and improvement of the environment. In the formulation of 1994 the main features are maintained and the reference to the future generations becomes the way to address sustainability.

"Sustainable Development: the process of sustainable and equitable improvement in the quality of life of people, based on appropriate conservation measures and environmental protection, in a way that does not compromise the expectations of the future generations." (Final Law 1994: 1189)

Here again emerges a particular tension between conservation as protection and as utilization of nature. An important element in this distinction refer to the fact that the active actions over nature are essentially conceptualized as "exploitation of resources" and not necessarily as "environmental improvement". The references to environmental improvement are marginal and the centrality of the normative relies on

allowing calculative and profitable rationality over nature by increasing the relevance of the time-space of regeneration as the central referent for ecological conflict.

Until now three sets of definitions have been analyzed especially as a social form to create consensus regarding the environmental basis of the law. In the following some legal mechanisms will be analyzed for their capability to materialize certain actions upon the environment.

Legal Mechanism in the Environmental Law: The Regulation of Anthropogenic Environmental Impacts

In the following three types of legal instruments or mechanisms that are central in shaping the society-nature relationship are explained. As was described above the central ecological definition promoted by the Chilean environmental law mobilizes the understanding of nature as already polluted and where certain levels of contamination are acceptable when they do not compromise human health. In this scenario the legal instrument will seek to fulfill the need to measure environmental impact by determining levels of pollutant concentrations and human risk. In addition, a second type of mechanism is advocated to organize social education in ecological affairs as well as social participation. The interaction between the instruments and definitions creates an accepted truth in the society-nature relationship. Each of these legal instruments is connected with a particular political response to the socio-ecological conflict in the form of reinforcement of the mechanism of environmental compensation, the anthropogenic measurement of environmental impact and the de-politicization of the socio-ecological conflict.

a) Legal Mechanisms to Assess the Environmental Impact

The Chilean legal framework considers two forms of understanding and proceeds depending on the quality and quantity of the environmental impact on the environment resulting from a new project and/or activity. When the assessment identifies a low level of impact the instrument used will be the "declaration of impact" (declaración de impacto), on the contrary, whenever the level of impact is considered high the "evaluation of impact" (evaluación de impacto) will correspond. The individual, company or State department that wants to initiate a new project that

may damage the environment or a particular ecosystem presents both instruments. When the impact is perceived as low the proponent will follow the declaration of impact, which testifies and presents the evidence to determinate low-level environmental transformation. When the impact is anticipated as high, the proponent will describe in detail the transformation and will also propose measures for its mitigation and compensation when they are unavoidable.

Environmental Impact Statement: The descriptive document of a project or an activity intended to be carried out, as well as the modifications to be introduced, given under oath by the respective companies and whose content allows the competent body to assess whether the environmental impact is consistent in regard to environmental standards […] Environmental Impact Assessment: The document which describes in detail the characteristics of a project or activity, intended to be carry out or modified. It must provide grounds for background prediction, identification and interpretation of its environmental impact and describe the actions to be implemented or to prevent or minimize significant adverse effects." (Final Law 1994: 1190)

The role of the State in the process of environmental impact assessment become increasingly passive whenever complete information regarding the future transformation, and mitigation and compensation measures are collected and projected by the proponent. In the legal framework the approval of the "environmental impact assessment" reminds as a faculty of the Chilean environmental commission, nevertheless, the evaluation will be confined to determine the adequacy of the information raised by the proponent. In this sense, it is possible to claim that the State loses its role of producing information about the ecosystem "baselines" and the environment "effects".

"Environmental Impact Assessment: the process in charge of the National Environment Commission or the respective Regional Commission, in each case, according to a study or Environmental Impact Statement, determines whether the environmental impact of activity or project complies with the regulations in force." (Final Law 1994: 1190)

In what has been called the shrinking State, the logic to privatize information production regarding impact on the environment could be justified and accepted as legitimate. But a central problem arises when we the information constructed by the proponent is not regarding factual reality. Private institutions are responsible to bring to the present future environmental conditions. In this sense, a striking omission in the political debate emerges when the institution in charge of making decisions about environmental impact, in fact, have less information than the organization that should be under regulation.

b) Legal Mechanisms that Define the "Norm" of Environmental Quality

The Chilean environmental law defines two sets of norms regarding environmental quality: i) the primary, which states levels of contamination under spatio-temporal limits that will compromise the health and life of a population, and ii) the secondary, which stabilize the limits of concentration that compromise general ecosystem preservation.

"Primary Environmental Quality Standard: that which sets the values of concentrations and periods, maximum or minimum allowable elements, compounds, substances, biological or chemical derivatives, energy, radiation, vibration, noise or combination, whose presence or absence in the environment may constitute a risk to life or health of the population […] Secondary Environmental Quality Standard: that which sets the values of concentrations and periods, maximum or minimum permissible substances, elements, energy or combination, whose presence or absence in the environment may constitute a risk to the protection or environmental conservation or preservation of nature." (Final Law 1994: 1191)

In both cases the instruments will make real the definition of pollution as something relative to levels of concentration and depending on the particular delimitation of time and space. In order to consider pollution from a legal perspective, the primacy of the human element is another element compounded by these legal instruments. This legal definition mobilizes big potential to allow large environmental transformation in a country where an impressive level of the GDP is produced in area where the human presence is almost nonexistent (Atacama Desert, Patagonia, Andes mountains and Pacific Ocean.) These areas are at the same time the places where extractive

industries and new energy projects are located. In the Chilean context, it is for this reason, the prevalence of an anthropogenic measurement of the environment is not as strict a measurement as ecosystem transformation.

c) Legal Mechanism Regarding Social Participation and Ecological Education

The third legal instrument that collaborates in order to stabilize a representation of the socio-ecological conflict as the discursive integration of: i) an anthropogenic pollution impact measurement, and ii) the sustainable exploitation natural resources, in the forms of social participation and ecological discussion.

The argument states that both mechanisms are proposed in order to avoid socio-ecological conflict, or in other words, to prevent their emergence. In contrast they should be oriented to find multiple solutions to the always multiple and contradictory positions in the construction of a public policy. What the Chilean environmental law lacks is a more integrative and plural "political ecology".

State support for education and even research in "ecology" is conceptualized as the better recipe for an informed population. In the same way, the mechanism of participation is the better formula to make this population accept and support the deepest transformations to the environment. Nevertheless, as response to the dissatisfaction with the environmental politic this ambiguous narrative should be confronted with the social movements emerging in the entirety of Latin America

Environmental Education: an interdisciplinary continuous process, aimed to formation of a citizenry that recognizes values, clarify concepts and develop skills and attitudes needed for harmonious coexistence between human beings, their culture and bio-physical environment surrounding; [...] The educational process at various levels, through the transmission of knowledge and teaching of modern concepts of environmental protection, aimed at understanding and awareness of environmental problems, should incorporate the integration of values and the development of habits and behaviors that tend to prevent and resolve them. (Final Law 1994: 1191)

In a very interesting formulation, the educational process should be applied by through incorporation of modern concepts to promote values as well as behaviors that

prevent ecological conflict. Similarly, a community informed of each stage of the environmental impact assessment should reduce the emergence of contradictory positions in the ecological arena.

It shall be the responsibility of the Regional Environmental Commissions or the National Environmental Commission; in any case, establish mechanisms to ensure the informed participation of the community at various stages of any process of Environmental Impact Assessment. To this end, the Regional Environmental Commission shall order persons to publish at its expense, in a newspaper of wide circulation within the respective region, an extract of the statements or environmental impact studies, as appropriate, with the essential information. (Law proposal 1992: 26)

These two legal instruments are, in my opinion, responsible for a progressively social awareness regarding the relevance of the society-nature relationship. Contrary to political expectation, these mechanisms are contradictory because they do not reduce but increase socio-ecological conflict. Education and participation, as is conceptualized in the environmental legal framework, do not consider alternative mechanisms for handling the emerging social struggle for new forms of society-nature relationships. Population is challenging the very basis of the "ecological modernization" in the country.

11.2.- Critical Discourse Analysis for the Chilean Environmental Law N°20.417 of 2010, Introduction

The critical discourse analysis of the Chilean law N° 20.417 of 2010 "Creation of Environmental Minister, Environmental Assessment Service and Superintendence of Environment" is presented in three parts: i) the presidential speech, ii) the parliamentary discussion, and iii) the factual law.

The presidential speech, which opens the parliamentary deliberation, introduces the need to modernize the environmental institution created in the 1990s. It has been approached mainly from its capability to create images about the social role played by the environmental national institutions. The discourse analysis shows how the presidential speech renders the environmental problem as a question of "institutions efficiency" and no longer as a consequence of specific social action applied over the ecosystem. In this context, social actions deployed toward the environment discursively lose their relevance in the emergence of socio-ecological conflict. In other words, the ecological concerns leave the idea of crisis as something material and become gradually embedded in a discussion of institutional mechanisms required to achieve compliance with environmental norms. Thus, besides engaging a real discussion about the social adequacy of the norm. In short, the social consensus by socio-political deliberation is replaced by an intended social pact organized around compliance incentives over mechanisms of surveillance and fines.

The parliamentarian discussion will be approached through a search for social forms of consensus-dissensus around the new institutional model. Particularly, it will be observed how are the new set of values promoted by the environmental law in the organization of the society-nature relationship are rendered. In general terms the focus of inquiry lies on the incorporation of the economic rationality to regulate environmental institutions and the different positions adopted by political parties. The analysis is applied to the discussion in the environmental and the financial commissions.

The factual law will be analyzed in its capability to set up new legal mechanisms to obtain social compliance with the environmental norm. In this case, the legal corpus becomes a central engine, not only creating legitimate procedures toward nature, but

also stabilizing the forms of social regulation over environmental institutions. The argument attempts to show the divergence between two opposite kinds of legal bodies, one that deals with social practices and anther that organizes the social institution. In the first case the legitimacy/illegitimacy it is directly applied over social action, while in the second, the legitimation applies to institutional procedure.

As a hypothesis, it will be proposed that in the second case, when legitimacy and accountability is applied primary to institutions, an "intermezzo" appears between regulations and practices. Intermezzo means that practices over ecosystem are not directly regulated and gain major levels of freedom. Deregulatory tendencies might appear when social concern is anchored to the question for institutional legitimate processes and only secondary applied over the natural, social and human consequences of different practices over ecosystems. If social practices obtain major levels of independence from their material consequences, then a strong movement toward the reorganization of the spatio-temporal frameworks for action appears.

11.2.1.- The Presidential Speech of 2008, Presentation of the Law N°20.417 / 2010

The Presidential Speech given by the former President of the Chilean Republic Michelle Bachelet Jeria on July 3rd of 2008 to introduce the deliberation of the law 20.417 "Creation of the Environmental Minister, Superintendence of Environment and Environmental Assessment Service", will be analyzed with particular references to: i) the new environmental challenges and the spatio-temporality for environmental institution de-ecologization, ii) the search for intersectoriality[205] as the central spatio-temporal re-structuration, and iii) the prevalent spatio-temporality deployed to ensure predictability/certainty in the environmental normative. As a conclusion of this analysis, and on a higher level of explanatory abstraction, the spatio-temporality of the environmental issues has been moved from the material condition of nature to the abstract features of the political institution. In this movement an "intermezzo" is opened up as a space and moment for deregulated action over the ecosystem.

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[205] Intersectoriality is a concept translated literally from the Spanish word "intersectorialidad" and it refers to the integration of different State departments and offices in the construction of public policy. At the center of this discussion is that in order to tackle some complex public problems the integration between different State departments is unavoidable.

A Predominant Spatio-Temporality

Law 20.417/2010 focused on modernization of the Chilean environmental institution created in 1994. The intention expressed by the government was to better comply with the new international treaties subscribed to by Chile in a context of economic opening and recent access to OECD in 2010. The political system moved the center of environmental concern from concrete social action over ecosystems to the institution designed to regulate those actions. It becomes possible to sustain that the environmental law of 2010 is an eminent reformulation of ecological management from material actions to abstract principles. It is precisely in the realm of rational management where tracking of spatio-temporal restructuration should be sought. This section will advocate for evidence of the discursive mechanisms needed to allow spatio-temporal restructuration implied in the change from social action to institutional management. In other words, a shift in the environmental legal frameworks from social action to environmental to the social institutions created to regulating those actions requires a novel spatio-temporal structure.

If we understand management as the rational capability to organize actions in the present to achieve future results by knowing margin error then the delimitation of spatio-temporal framework in which our phenomenon is measured becomes crucial. In a more critical formulation, the management rationality, as a modeling capability to foresee future results based on organization of current action, has power only within a strict spatio-temporal delimitation. This spatio-temporal structure of the rational management would selectively consider/exclude inputs, effects and consequences from the evaluation process. The spatio-temporal limits of the environmental management are directly connected with the type of action allowed over the environment.

The managerial re-structuration of time and space runs in connection with three discursive orientations promoted by the political authorities in the presidential speech of 2010: i) to define the environmental problem as solely environment management improvement and not as an urgent crisis for ecosystems and communities, ii) to define the search for intersectoriality in the environmental policy as the principal target for the modern institution above the need to define baselines for local, regional and

national ecosystems, and iii) to propose predictability and certainty in the institutions as central dispositives for obtaining social acceptance of the law.

a) The Disappearance of the Environment References in the Novel Environmental Law

A first discursive strategy deployed in the presidential speech of 2010 was to situate the ecological problem as a question concerning the "degree of compliance" with the environmental norm. Thus, highlighting that the implementation of a modern environmental institution since 1994 has well done by the country. In this scenario, the official discourse promotes shifting concern from "actions over the environment" to the "institution that regulates those actions". The following quote from the presidential speech shows the shift from the environmental concern to the institutions organized to regulate these affairs. The main target of the second wave of ecological modernization in Chile is to rationalize environmental management.

"But our goal is not only to create new public entities; first of all comes the intention to modernize the institutions and environmental management, installing a new public management model: modern, agile, efficient and subject to accountability." (Bachelet 2008: 6)

The political authorities deliver a representation of the ecological crisis as something that passes and overcomes, and by this way, they provide the basis for a des-ecologization of the social dispute of the relationship with nature. Whenever the official discourse considers environmental institutional modernization due not to the failure of current regulation but as purely the intention to make things better, a space for deregulation of action appears. The argument is found in the hypothesis that renders the environmental crisis a challenge and not as a problem. This allows a de-ecologization of the socio-ecological conflict. This is because the dispute for a specific way of organizing the society-nature relation becomes increasingly de-temporalized and de-localized.

If there is no ecological crisis –as the presidential speech proposes- then environmental conflicts cannot possibly be situated in specific time and space. In a similar fashion, the environmental challenge to make things better could be pursued

with total independence of a time and space definition of priorities. To posit the argument in very simple words, two examples may be very illustrative: to clean up the mess in my kitchen should be done in the kitchen and immediately after the disaster appears. The challenge to making my house nicer could be pursued anywhere, in the living room, in the bedroom, in the kitchen, in the garden, and at any time. To make something better it is not necessarily urgent. In the case of environmental legal framework, this condition is highly relevant because it despoils the socio-ecological conflict of its selective character in social, temporal and spatial terms.

As it has been defined throughout the thesis, socio-ecological conflicts are the result of a spatio-temporal coincidence of contradictory orientation for action. Environmental damages, in opposition, do not require a direct spatio-temporal correlation in its natural and social dimensions; they can be produced from long distance and distanced in time. This is exactly the condition captured by the notion of slow-motion environmental damage, such as the Ozone layer, the acid rain and global warming.

To discursively change the ecological crisis into an ecological challenge means to reject the existence of a social dispute for stabilizing the society-nature relationship in the country. The presidential speech proposes that the socio-ecological conflicts can be reduced through major quantitative compliance with environmental norms. When this is the case, discursively there is no discrepancy between a pro-environmental conservation perspective and pro-economical development. This scenario is far from the Chilean situation, which during 2011 experienced a re-emergence of socio-ecological dispute. Social movements rejected the national energy policy that intended to build hydroelectric plants in the Patagonia and thermoelectric plants in the Atacama Desert. While the official discourse promotes the "ecological achievements" that have been observed in the last twenty years, reinforcement of the spatio-temporal correlation between environmental problems and disadvantaged territories and populations is revealed

"The environmental performance evaluation for Chile [from international reports] indicates that on average we have done things right, but we still have a long way to

go. Indeed, we must move to a new stage of policymaking subject to accountability […]" (Bachelet 2008: 16)

In the Chilean national context, the confidence in having done things well in environmental terms is extended. From an unreflective standpoint, the official discourse proposes Environment Impact Assessments (EIA) as a successful methodology in regulating the environmental objectives constructed in the 1990s. The problems, in the interpretation made by the official discourse, come only later and from the low capability of the environmental institutions to oversee compliance with the environmental norm.

From another side, the re-emergence of socio-ecological conflicts after 2010 is connected to the governmental approval of mega-projects in terms of energy production and resource extraction. In these situations the social claim is contra the environmental impact assessment's (EIA) claim of legitimacy and its outcome in the approval of mega-projects. The population rejects the compensation mechanisms defined by the authority to internalize the so-called environmental impacts because they are considered insufficient and overruled. The extended belief in good environmental performance at the national level comes from a very restrictive delimitation of the policy's targets. They have been restricted to pollution control but omit the uneven territorial distribution of environmental burden. The socio-ecological conflicts are related to an extended regional productive restructuration. This process distributes territorial roles that lead to an increased regional dependency in environmental terms. The following quote shows how the evaluations made by the authorities of the Chilean environmental impact assessment are concerned solely with the evaluation of time and not with accuracy of the evaluation. This situation has been contested by the civil society in the last four years.

"We must remember that our Environmental Impact Assessment Service is one of the most successful in the world. It is the one that shows, in comparison, the shortest processing times [for project evaluation]." (Bachelet 2008: 19)

There exist after 2010 political restrictions to broaden the scope of environmental policy in Chile. Socio-ecological conflicts that are not reduced to pollution control

and resource management are excluded from the environmental sphere. This process, named as de-ecologization, has been promoted by the discursive transformation of the environmental crisis in a political challenge. The new environmental institution, in this process of de-ecologization, is changing the spatio-temporal framework in which the socio-ecological conflicts are organized.

b) Searching for Intersectoriality in Policy Without an Spatio-Temporal Definition of Ecosystems

Within the Chilean rhetoric concerning public policy there frequently appears the reference to a new approach based on intersectoriality. It will be shown in the following section how the search for intersectoriality operates as spatio-temporal restructuration inside Chilean environmental institutional modernization. Intersectoriality is not accompanied by a definition of ecosystem where it will be applied. Intersectoriality as a public policy answer to a socio-ecological problem is based on two previous definitions: i) the environment phenomena are in origin multicausal, meaning, different dynamics converge in the construction of complex socio-ecological realities, and ii) the phenomena under study should be placed in a spatio-temporal matrix, which is the responsible for bringing coherence to the dynamic construction between the origin of the socio-ecological conflicts and the responses. Only by complying with this requirement can intersectoriality lead to a more sensible public policy intervention. Nevertheless, the presidential discourse never engages the problem of the political limits of intersectoriality or the requirements for its application. In the following quote from the presidential speech, it is possible to observe how intersectoriality is rendered only as integration of competencies in a single authority.

"The re-design seeks to rationalize competencies in order to have an authority which can issue policies and regulations for the protection of environmental resources; the sectorial competencies will therefore be organized and coordination facilitated within the public system" (Bachelet 2008:11)

In the case of Chilean environmental modernization intersectoriality as public policy orientation only fulfills the first the two aforementioned requirements. The lack of the second leads to a spatio-temporal abstraction that cannot frame with accuracy the

analysis of socio-ecological conflicts. To make the discussion more concrete, examples of poverty and ecological policies as different cases, where the search of intersectoriality remains the core intervention, will be explain in short,

Most of the references to intersectoriality in the Chilean case appear connected with programs seeking to overcome poverty in the period considered as democratic transition. In this case, poverty has been understood as a confluence of different deficiencies, that working together creates a dynamic situation where people accumulate disadvantages and lose the capability to articulate advantages. This is presented as the origin of the processes of social exclusion. Poverty is not only a phenomenon produced by low income or exclusion from the labor market, in addition, it is understood as the integration of disadvantages in housing provision, weak location in the city and so associated with urban segregation, low result in scholar education, and many other social problems, well documented literature, such as: delinquency, violence, scholar dropout, early pregnancy etc. When poverty is understood as a confluence of problems in work, house, health, education and social integration, then the action required to overcome the disadvantaged condition, can only emerge from the coordination of different State departments.

For the environmental case, the situation is similar. Sectorial policy is represented by the independent action of every State department with jurisdiction in what has been understood as environmental components e.g. water, soil, air, flora and fauna. This kind of policy shows a low capability to coordinate effective responses to ecological problems, because such problems are integrative in consequence and effect. In other words, environmental problems do not follow the administrative division of nature, and on the contrary, they operate in the integrative way characteristic of ecosystems. Integrative policy allows major efficiency and efficacy gain in the environmental policy. This condition is highlighted by the presidential speech.

"Indeed, if the environment is a system in which all elements that make up the existence and development of living organisms are organized, then environmental management should be understood as an integral activity and can not be seen as referring to each of the elements of the environment separately. But in addition and

preferably, it [management] should refer to all elements as a whole and in their interaction processes." (Bachelet 2008: 11)

Integrative measures in socio-ecological issues should be articulated in the spatio-temporal framework defined by the different ecosystems under consideration. This means: i) taking into account the spatio-temporal extension of the ecosystem, ii) the baselines in which ecosystem dynamics are reproduced, iii) the regenerative capabilities of each ecosystem at the local level, and iii) the accumulative effects as result of other environmental functions located at higher territorial scales. This is exactly the role the "National Biodiversity Service" (NBS) should play. It is the only institutional reform in the law 20.417/2010 that failed to gather a majority in Congress. Until today the National Biodiversity Service has not been implemented and waits parliamentary approval. The presidential discourse could not foresee the parliamentarian objection to the National Biodiversity Service, but it could address the lack of an integrated system of protected areas in terms of biodiversity.

"Chile lacks an integrated system for regulation, classification and management of areas under official protection. Indeed, it is a known fact that the law, which has been the basis in this respect, has never been enforced, and this has been the situation for more than 20 years." (Bachelet 2008: 21)

For the time being, an intermezzo has been articulated between i) the official knowledge of national ecosystems, ii) the regulatory capability of the new environmental institution, and iii) the private economic initiative, all with the intention to promote mega projects that instigate unforeseen consequences. The spatio-temporal re-articulation promoted by the search for intersectoriality is based on a very restricted view of socio-ecological problems, and it is expressed in the abstraction made by the public policy to the material characteristic of ecosystems. Ecological measures -in the form of restrictions and permissions- are applied with a lack of regional planning. Intersectoriality in environmental policy has not been accompanied by a study of the spatio-temporal frameworks in which the social actions over the environment are embedded. For this reason, economic actions restructure vast regions without any socio-political constraint. This is similar in fashion to the rendering of the ecological crisis as a social challenge loosing sight of

the spatio-temporal framework in which environmental problems takes place. The search for intersectoriality adds to this process a de-localized and de-temporalized framework to assess intervention in the environment. As a result the socio-ecological conflict seems not reduced but reinforced.

c) The Prevalent Spatio-Temporality Deployed to Ensure Predictability and Certainty in the Environmental Law

The reform of the environmental institution in Chile appears in the presidential speech as part of modernization in the National State. The transformation in the environmental policy exceeds the scope of ecological concern and is anchored to a discourse about improvement in public policy management. In the following very explicit quote from the presidential speech, the intention to reduce uncertainty in society by the modernization of the State institution appears. In addition, by saying that no big changes will be promoted the intention to deliver certitude to the economic sector is clear. The "rules of the game", a very unambiguous sentence in Spanish, expresses that favorable conditions for the extractive industries shall remain.

"More than a few people believe that the creation of public institutions promotes bureaucracy and may create uncertainty by modifying operating conditions of economic activities. Such statements contain an ignorance of the social usefulness of institutions, which indeed seek to avoid such risks. There can be no reform of the State without progress in reforming its institutions. Indeed, the institutional framework delivers the "rule of the game" in society by structuring incentives to promote desired behaviors and to establish the system of rights and duties. In this way, it reduces uncertainty for the activities taking place in society." (Bachelet 2008: 5)

Market mechanisms are always rendered as the better regulatory arrangement. In addition the privatization of some sections of the public policy appear as a space for private entrepreneurship, which is considered a valuable civic virtue. Market and entrepreneurialism will be analyzed inside the new environmental institutional arrangement in this section. The argument posits that the wave of ecological modernization of 2010 should be understood as an attempt to introduce market mechanisms for regulating environmental problems. The section describes, with

special emphasis, how the governmental proposal of predictability and certitude in the environmental norm acts as the key element for promoting spatio-temporal re-structuration.

The analysis proposes to highlight the orientation toward the creation/maintenance of certitude among the business community within the presidential speech. The environmental norms would be predictable in the medium and long term, and they bring certitude in terms of incentives and restrictions. Chilean ecological modernization poses no risk to the growing capital investment in extractives industries. A similar situation happened in the 1990s when the modernization of the environmental institution, proposed in the presidential speech, appealed to "gradualism" as a strategy for incorporating new environmental standards. Both strategies prevent the Chilean environmental institutional transformation from impeding the extractive orientation. Which have been assumed as the core of the economic integration of the country in the global markets. The following quotation from the presidential speech shows an initial concern with the predictability and certainty for the private project and only secondary for communities.

"Policies and standards should deliver certainty in the medium and long term [...] Indeed, we must move to a new stage of [governmental] decisions subject to accountability, which allows us to make sustainable decisions in the medium and long term, with certainty for private projects, but also for communities and their inhabitants." (Bachelet 2008: 13-14)

It remains unanswered how predictability and certitude are indeed capable of re-articulating space and time. Predictability and certitude are framed in the presidential speech around i) an economic performance that moves capital accumulation, public freedom and resolution of inequalities; and ii) sustainable decisions for the medium and long term, positives for the privates and the local communities.

In short, the official discourse intends to harmonize the duality that opposes private entrepreneurship and citizen rights, but what is clear is that predictability and certitude are not equally deployed for all social actors involved in environmental

conflict. Furthermore, predictability and certitude are often opposed for different actors.

Predictability and certitude for the private implies the expansion and deepening of markets, in a double process explained by the Marxist tradition as "Landnahme" (Dörre 2011). Simply put, landnahme implies that capitalism grows only partially by the gain in efficacy from within consolidated markets. Major capital growth is explained by the incorporation, in the form of colonization, of places –territories- and domains -activities- to the market logic "at the cost of none-capitalistic ones" (Dörre 2011:91). For the extractive industries landnahme shows expansion by domain/activity, when the environmental law organizes the environmental conflict by capitalistic logic. On the other hand, landnahme shows expansion by places/territories when extractives processes are enlarged in existing areas and explored beyond those limits for new enterprise.

Predictability and certitude for economic activity mean to ensure the return of invested capital. This situation does not ensure equal conditions for a conservationist stand in terms of nature's protection. The domain regulated by market logic in terms of predictability and certitude is capital investment and not socio-ecological dynamics. Under the construction of economic certitude what becomes predictable is the growth of extractive industry In this sense, estimation proposes duplication in productivity for the following years. A foreseeable group of socio-territorial transformations in the productive inputs are: i) land, water and energy distribution and supply, ii) labor market reorganization, and iii) the settlement patterns of the population –formal and informal-. These consequences are not what a social scientist, a non-governmental organization, and local communities understand under the notion of predictability. The socio-ecological risks are growing and bring incertitude to the local level.

Now focusing on the spatio-temporal dynamics, the restructuration runs as an enlargement of time-space of the extractive industries. The spatio-temporal horizon under the notion of predictability has been enlarged in disregard of any consideration of the socio-ecological conflict. Certitude in terms of economic investment means that what occurs today, will continue tomorrow, after tomorrow, and so on. And

simultaneously, what occurs here will occur there, and over there, and so far. Besides the fragmentation of territories and the acceleration of processes of capital investment, the extractive industry anchors its power in enlarged spatio-temporal frameworks. These frameworks give stability and efficacy to the actions deployed by the extractive industries. In summary, the economic improvements as creative destruction and high innovation are only expectable in the short run. In the medium and long-term contexts, stability and even certain degrees of slowness are more influential. The opposite dynamic is observed for the case of society and environment; they experience constant temporal acceleration and territorial des-articulation. This situation is a consequence of gaining certainty for the extractive industry.

A Spatio-Temporal Dispositive: Rational Management as an Abstract Framework to Regulate Environmental Issues

The notion of dispositive has been approached throughout the thesis as an ensemble of discursive elements that integrate a narrative at micro as well as macro levels. From the perspective of Foucault, the large integration of social discourses, institutions, and practices are connected with the construction and maintenance of social truth and by this way, with the exertion of power.

The intention of the legal discourse analysis is to observe how at the micro level discursive elements i.e. spatio-temporal orientations, action orientations, social principles and, types of speech are all organized in order to support major narratives. These social narratives are considered as the macro level. They are a special place for organizing the rhetoric of ecological modernization in the country, the managerial orientation assumed by the environmental policy, and the spatio-temporal restructuration required by action and institutions.

For the case of Law 20.417 / 2010, the micro level shows clearly the movement toward a managerial orientation in the environmental policy. In other words, the second wave of ecological modernization in Chile is an exacerbation of the rational management and market mechanism for the regulation of environmental issues. This section seeks to prove how a managerial orientation becomes a discursive dispositive for spatio-temporal restructuration, how a novel spatio-temporal structure emerges

from rendering environmental institutions under speculative logic, the central characteristic of the environmental management.

As was presented in the analysis of Law 19.300, the official discourse renders environmental problems in a way that converges problems and solutions. In the 1990s the discursive dispositive emerged as the correlation between the spatio-temporality of the environmental crisis consolidation and one of the political responses. In short, the argument proposes that as the ecological problems have been consolidated over decades, a realistic social response should be found in the long term. If in the 1990s the dispositive was the notion of *gradualness* then at the end of 2000s the discursive apparatus is the political construction of certitude for the economic investments.

The underlying argument proposes that every wave of modernization in Chile, in the beginning of 1990s and at the end of 2000s, has been factually connected with growth in the extractive industries[206]. From this perspective the environmental policy in particular, but also the public policy in general, is rejected as a final stage of social organization. On the contrary, when a policy is enacted, a social process of reorganization begins. This reorganization would allow, as well as constrain, certain social action and practices. Therefore in order to increase the probability of specific action, the restructuration of time and space play a central role.

The discourse analysis of the presidential speech of 2008 emphasizes the rise of institutional improvement as the central concern of environmental policy. In the same movement the material consequences of the social action, over different ecosystems, loses relevance. This managerial movement experienced by the environmental policy proposes discursively that: i) all the actors are impelled to collaborate toward the environmental challenge, ii) the ecological crisis or its critical phases have been overcome and, iii) the accountability regarding the ecological damage has been strictly limited. These conditions together speak of a des-ecologization and de-politicization of the environmental policy. In other words, the socio-ecological conflicts are not longer the main concern of the policy and its place has been exchanged for environmental institutional modernization.

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[206] See chapter nine on the Chilean context of the Ecological Modernization

The analysis presents a novel spatio-temporality emerging under three mechanism: i) the disappearance of environmental references in the novel environmental law, ii) the search for intersectoriality in policy without a spatio-temporal definition of ecosystems, and iii) the prevalent spatio-temporality deployed to ensure predictability/certainty in the environmental law. Together they organize a spatio-temporality in which the material organization of the ecosystem is not the central focus. As was noted above, the presidential speech is explicit in harmonizing the spatio-temporality of the environmental institution, primarily the one pertaining to the economic sector, and only secondarily connected with the situation of ecosystems and communities at the local level. Nevertheless, as a narrative construction, it is still an integration of the spatio-temporality of problems and the spatio-temporality of the solution.

The congruence between problem and response has been practically implemented under the notion of certitude. The transformation in the environmental institution should be predictable for economic activity and should not compromise the conditions in which investment have taken place. Nevertheless, from a sociological perspective, there are many forms with which to understand certitude and there is no one that should be taken for granted. Certitude appears as a characteristic of the social context of different actors groups. In other words, what is a predictable context for one actor could be very uncertain for another. Anchored to the notion of certitude are the spatio-temporal frameworks for action. The certitude required by economic investment in extractive industry is deployed in the medium and long term. Simply, the favorable conditions for comfortable exploitation in Chile should remain in the medium and long run. Even more, the social conditions of natural resource exploitation should offset the constant fluctuation of prices of commodities in the international market. Summarizing, a discursive dispositive promoting certitude for economic investment carries incertitude for other social actors. Spatio-temporality suitable to economic investment creates spatio-temporal structures and arrangement adverse for social action concerned with the conservation of nature.

As was expressed above the spatio-temporal structures and arrangements organized by the environmental policy are constructed around the removal of concern for

ecosystems. The des-ecologization of the environmental policy or a policy abstracted from the spatio-temporal condition of ecosystem implies a process of de-territorialization and de-temporalization. The processes of ecosystems play a secondary role under the primacy of the spatio-temporal structure required by market, entrepreneurship, and compliance incentives. In this line, for example, the Law 20.417 / 2010 proposes the notion of self-reporting or self-denunciation. With this mechanism people as well as companies could report themselves for a violation to the environmental norm within five days of an event. The example seeks to emphasize that five days following violation environmental norm is simply an arbitrary measure. There is no logic or reason to believe that every national ecosystem could be equally resilient for five days without comprehending the magnitude of the problem. The spatio-temporal structure created by this legal mechanism is by no means connected with the material conditions of the ecosystems.

This example sheds light on another issue that without the creation of ecosystem baselines has been called the search for intersectoriality. Environmental management in Chile has been applied without a real knowledge of ecosystem capabilities to support human intervention. An abstract spatio-temporal structure appears to rule nature, or in another formulation, ruling the measurement of social action over ecosystems. This abstraction of the material spatio-temporality ruling human interaction with ecosystems is the condition behind which the big regional productive restructuration occurs in the country. As was shown in chapter nine regarding the Chilean context of the ecological modernization, extractive industries are organizing mono productive clusters with an extension that exceeds thousands of kilometers. This process ensues without any real restriction, an even more, without any substantive consideration of ecosystems.

Summarizing, my reading of the presidential speech of 2008, introducing the law "Environmental Ministry", highlights the stabilization of a spatio-temporality connected to the extractive orientation of the Chilean mode of production. At the same time stresses the link with the spatio-temporality of environmental management as the main form in which economic sustainability will be understood in Chile after 2010. The emergence of this form of spatio-temporal representation should be interpreted not as a misleading description of the reality; a better metaphor is the idea

of a spatio-temporal "intermezzo". The spatio-temporal equalization of environmental problems and responses creates a sort of "in between" condition in which social action loses its material restriction by its abstract organization in terms of management. It is not the intention of the analysis to easily conclude that every form of management falls short in regulation of social behaviors. Nevertheless, there is a clear interlude between the transformation in the environmental institution and the moment in which this transformation factually organizes social actions. The discourse analysis highlights this moment and the strategies that the political system deploys in order to maintain an unrestricted use of nature. Throughout this research this process has been called de-ecologization and has been connected with the re-emergence of the socio-ecological conflict in Chile. After 2010 environmental problems are interpreted as the failure to control mechanisms exerted by the environmental institution. In the same fashion that during the 1990s no social conflict is recognized as a legitimate part of the debate surrounding the society-nature relationship. In the following section the parliamentary discussion is revised to describe the level of social agreement/discrepancy regarding representation and response to the ecological conflict.

11.2.2.- Commission Discussion Law N°20.417 / 2010

The parliamentary discussion about the first Chilean Environmental Law is addressed with a focus on the senator's discussion that occurred in the Finance and Environmental Commission during 2009. As with the analysis of the Law N°19.300 / 1994, the parliamentary discussion has the possibility to show levels of social consensus-dissensus regarding the society-nature relationship performed in Chile since 2010s. Four topics emerge from the discourse analysis by capturing the way in which the senators discuss: i) the instruments of territorial planning connected with the environmental law, ii) the legitimacy of the way in which the environmental impact assessment (EIA) has been implemented, iii) the discussion about which territorial areas should be considered as protected, and iv) the discussion about what it is protected by the environmental law.

These four themes have the possibility to host similarities as well as differences between the two commissions. At the same time, the four themes will connect the

analysis made of the presidential speech with the inquiry about the factual law. In other words, the commission discussion proposes elements to organize together the three parts of the analysis.

a) The Territorial Planning Connected With The Environmental Law

One central reference in the parliamentary discussion, especially in the environmental commission, is the relation between the environmental law and other instruments of territorial planning. This theme reinforces the argument presented in the presidential speech analysis regarding "searching for intersectoriality in policy without an spatio-temporal definition of ecosystems". The discussion revolves around the lack of planning connected to the environmental law. As a consequence of this situation, no substantive opposition could be raised against productive projects with a basis in damaging pre-existent activities in the territory and/or other productive vocations of the region. The following quote shows the problem produced by a mining project installed only one kilometer away from one of the most renowned natural attractions in the north of Chile: the "Tatio Gyser".

"Under the current legislation, there is no arrangement that obligates a mining exploration project located one kilometer from a geyser explain to the State how the project is related to the community development plan, which could intend to strengthen the tourist vocation." (Environmental Commission 2009: 1508)

The quotation shows how the environmental commission brings about a case to question the environmental impact assessment (EIA) as a legitimate tool. Examples are given to show that a sort of total independence has been created between the environmental legal frameworks and the existing instruments of regional planning. The current strategic plans of development are not integrated into the environmental evaluation. This condition that could be called instrumental autonomy diminishes the capability to socially and politically organize action over the territory. In addition, it is possible to state that a lack of spatio-temporal frameworks to organize action toward the environment is strengthening. In previous sections this situation has been called a de-ecologization of the socio-ecological conflict with the intention to grasp how the environment policy becomes divorced from the material references to a particular ecosystem. Summarizing, spatio-temporal regimes appear connected with processes

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of de-territorialization and de-temporalization of social action because material references are not integrated in the environmental law. The following quotation shows the judicial condition of the problem to articulate environmental norms and instruments for territorial planning.

"[…] Regional plans and community plans of development are not mandatory but indicative, therefore, could apply to demand the form relationship and justification [between economic project and development plans]. It could not apply to demand by law the integration between instruments contained in different regulations, so it was opted to use the term "relate" in the law." (Environmental Commission 2009: 1516)

The quotation shows, even in a judicial language, that environmental instruments are not directly coordinated with the instruments of territorial planning. This situation brings territorial tension between the action orientation of local communities and actions orientations of economic investment. There is no legal sustenance to claim a territorial coherence of the approach showed by different actors, and this situation it is not a problem related only to environmental policy. The territorial planning in Chile is not mandatory but indicative. This institutional characteristic of Chilean territorial planning is very important for understanding the spatio-temporal restructuration occurring as a consequence of the extractive industries.

b) The Legitimacy of the Environmental Impact Assessment (EIA) Implementation

Environment impact assessment (EIA) has been presented in the presidential speech as having been successfully implemented during the last fifteen years. Nevertheless, the environmental commission extensively discuses the cases in which this evaluation should be mandatorily applied or not. From the perspective of the thesis, the implementation of the environmental impact assessment is far from being successful. Criticism of its legitimacy appears not only within the social movement but also in the opinion of some senators. The following quotation reproduces the opinion of one senator, who opposes the politicization of the environmental decision. In his perspective politicization should be considered a synonym of external intervention.

"The Honorable Senator Mr. Girardi conceded that the policy project has many positive aspects, but at the same time has serious omissions as to keep the precarious standard of the norm. He added, that he has questioned the politicization of technical decisions. These decisions have never been technical but have always been political. Most of the major pollutant projects were approved despite negative technical reports. This has become a normal way of proceeding; it has become a sort of aberrant culture that generates major environmental disaster in the country." (Environmental Commission 2009: 1516)

In short, the environmental impact assessment (EIA) has been criticized because its lack of integrative analysis of "impacts" in meaningful ecosystems. In other words, the material spatio-temporal articulation of ecosystems is absent for the policy mechanism to evaluate environmental transformations and damages. The spatio-temporal arrangements in which the environmental impact assessments (EIA) are measured are extremely reduced. There is no spatio-temporal structure beyond the analysis of the single project and from this perspective an abstraction of the ecological condition of environment is allowed by the policy.

c) The Discussion About Protected Areas

Connected with the lack of regional planning in environmental law and with the low level of legitimacy of the environmental impact assessment, the environmental as well as financial commissions discuss broadly natural areas that should be considered under national protection. This situation strengthens the argument presented in the presidential speech about the absence of a "National Biodiversity Service". In other words, there is no parliamentary consensus toward the areas under protection in terms of definition, regulation, classification and management. This situation could be analyzed as an institutional defect, but from the perspective engaged in the discourse analysis, it outcomes in the spatio-temporal organization are relevant. The parliamentarian discussion shows that there is no social consensus about what should be preserved. In the following quotation, evidences are given to conclude that no social consensus exists around the official definition of protected areas.

"Priority sites are important sites of scientific interest, tourist sites, or where endangered species are found, also wetlands where government action is applied with

the intention to transform them into protected sites. That is the case for the National Register of Wetlands, administered by CONAMA […] however, at present they are not protected […] To insist that glaciers undergo evaluation [environmental impact assessment], it is a matter of common sense." (Environmental Commission 2009: 1530)

In the last years there is an increasing consensus toward the protection, for example, of wetlands. Nevertheless, protection regarding glaciers does not garner the same concern. The protection of local ecosystems in the Atacama Desert is only imaginable when touristic attractions are involved in the form of a special geyser, rare lagoons and/or spectacular valleys. All other ecosystems in the desert are characterized as empty places, as, for example, a place that would not socially exists without the mining activity. This social representation of valuable and non-valuable territories is very much connected with the spatio-temporal structuration.

Valuable ecosystem should be protected in terms of slowing down the possible ways of transformation, especially, by decelerating the processes of nature's exploitation and commodification. The environmental law does not protect non-valuable ecosystems that would undergo accelerated forms of transformation by the exploitation of resources, by polluted activities, and/or productive industries. The representation of territories as empty places, not deserving the conditions of protection, together with the explicit abdication to regulate the exploitation of natural resources, are two very strong discursive dispositives behind the growth of the extractive industries in the country.

d) What Does Protect the Environmental Law

A very interesting level of disparity between the environmental and the financial commission appears when observing the role of the future Environmental Ministry. The environmental commission intends to enlarge protection from renewable resources to the non-renewable. All the senators in the financial commission rejected this proposal. The following quote shows the role given by law to the Environmental Ministry in Chile, and the rejection presented by the financial commission to a regulatory character over non-renewable national resources.

"The Ministry of the Environment is the State Secretariat who work together with the Republic President in the design and implementation of policies, plans and programs on the environment, as well as the protection and conservation of biological diversity and renewable natural resources, promoting the integrity of environmental policy and legal regulation […] In a vote, indication number 546 was rejected [to refer to renewable as well as non-renewable resources] unanimously by the members Commission, Honorable Senators Mrs. Matthei, Mr. Escalona, Mr. Garcia, and Mr. Sabag. (Financial Commission 2009: 1770-1775)

Perhaps this fact does not immediately call for attention but it is very important for a national economy that is organized mainly around extractive industries. Copper exploitation is the principal source of revenue in the country and a non-renewal resource. If the environmental ministry has no capability for response regarding the maintenance and preservation of this resource, then no constraints to exploitation can be claimed. This very subtle organization of environmental law has very strong and pervasive outcomes. The commodification of nature has been organized in a speculative spatio-temporally. The only information that speeds up or slows down the extractive industries is the international price of commodities and not any social or political consideration. In scenarios of high profitability the acceleration of resource extraction achieves exponential levels. In this context, no political or social consideration regarding ecosystem transformation, regarding monopolization of productive inputs or transformation of people's living conditions, can restrict action oriented toward the exploitation of nature.

From the definitions of protection areas and non-renewal resource defence, it is possible to distinguish two forms of spatio-temporal restructuration: i) A very restricted spatio-temporal delimitation of environmental impact of productive projects that are limited to immediate surroundings. Meaning, the legal inability of the law to account for agglomerated effects of single projects accumulated in a territorial region. ii) An unrestricted spatio-temporal organization of the extractive industry for its internal requirements. This means, the legal abdication of the political system for organizing the spatio-temporal structure of natural resource exploitation.

11.2.3.- Factual Law N°20.417 / 2010

The factual law approved on the 12th of December of 2010 as the "Creation of the Environmental Ministry, Environmental Evaluation Service and Environment Superintendence", enters into the parliamentary deliberation on 2008 and suffers from a group of modification in its process of enactment. The law N°20.417 / 2010 present difficulty for analysis as it is a reformulation of the previous law N°19.300 / 1994. The analysis proposed here will approach the legal corpus by highlighting the two aforementioned dimensions but from another perspective: i) the role of the Environment Ministry as re-ecologization of the general public policy in terms of other Ministries and State offices. This could be an opposed movement to the one described above as de-ecologization of the environmental evaluation; ii) the role of the Environment Superintendence to enforcing privates to include environmental evaluation of total projects avoiding its subdivision. This could be considered as a movement toward a more accurate account of impact assessments.

The responsibility of the Environmental Ministry to begin a process of public policy re-ecologization means an incorporation of the ecologic perspective within other Ministries' actions and processes. The following quotation shows how this function has been rendered in the initial law.

"Ensure compliance with international conventions, to which Chile is party in environment issues […] When the conventions [above] mentioned contain, in addition to environmental matters, other sectorial elements, the Ministry of Environment must integrate these commissions within the technical, administrative, or scientific counterpart. [The Environment Ministry] must collaborate with the sectorial ministries in formulating environmental criteria to be incorporated in the development of policies and planning processes […][The Ministry of Environment] suggests, in agreement with the relevant agencies, environmental policies for the handling, use of and benefit from renewable natural resources." (Law Proposal 2008: 23)

This element was not changed in the final law approved in 2010 and shows one of the central elements highlighted by the discourse analysis. The de-ecologization process is not running inside an explicit narrative that diminishes the social and political role

of environment, on the contrary, it is part of movement proposing to take care of nature. Reinforcement of nature's commodification is not produced by practices that openly subordinate environment. Paradoxically, actions as well as discourses that seek to protect the environment are at the base of its deterioration.

The legal definition of the Environment Ministry functions as re-ecologization of the State policy and runs in parallel with the movement toward de-ecologization as proposed above. The incorporation of environmental consideration within the policies promoted by other State offices aside from the environmental Ministry is only possible within a very restricted understanding of environment. This understanding, as it was explained, lacks the material characteristics of ecosystems as well as the spatio-temporal references in the territory. A very pervasive movement toward de-territorialization as well as de-temporalization appears as a consequence of such specific articulations of time and space required by the extractive industries in Chile.

From another side, one of the Environmental Superintendence's functions is to control and prevent the subdivision of a project when evaluated in terms of environmental impact. Mega-projects in Chile have been systematically subdivided to increase their probability of approval. Different stages and phases of a single project are presented as independent enterprises. The following quote from the Final Law shows the intention of the government to avoid this form of entrepreneurial action.

"-the new law- forces proposers [of productive projects] to properly enter into the Impact Assessment System for the entirety of the project, [especially] when they have split their projects or activity phases, with the purpose of evading or manipulating the project evaluation." (Final Law 2010: 1204)

If the Environmental Superintendence is accountable to regulate an accurate spatio-temporal extension of projects in the environmental evaluation, then it is possible to argue that the Law lacks an effective consideration of the spatial and temporal frameworks of the economic enterprise. In other words, the material spatio-temporal frameworks for economic projects are not self-evident and policy should invest in its definition and regulation.

As was expressed above, socio-ecological conflicts are not only produced by the possibility to misleadingly present a single project as many different ones. The total failure of the Environmental Impact Assessment (EIA) to account for the agglomerated effect of many single projects in a region is conflictive. As was presented in chapter nine in the Chilean context of ecological modernization of the mining industry between the 1980s and 1990s, the amount growth of big-mines went from five to around twenty-five. The environmental stress produced by all enterprises together over land, water, energy, and labor is not accountable by measuring the impact of one project.

This shortcoming of the Chilean environmental Law is a key element for understanding the national productive restructuration beginning in the 1990s. It could be explained as a process of spatio-temporal restructuration. The spatio-temporality framing of the life of local communities is connected to material ecosystems with very specific resource restrictions. In contrast, spatio-temporal frameworks for environmental evaluation tools have been artificially reduced to the influences of single projects in very small areas and short time spans, and so, a constant tension between the spatio-temporal frameworks of different social actors is reinforced. In the following the main results of the discourse analysis would be summarized.

11.3.- Chapter Eleven Summary; Critical Discourse Analysis in the Environmental Legal Framework

The discourse analysis over legal systems is not restricted to describing the interpretation of social reality. In contrast to other types of social speech, legal systems are tied to the praxis sphere by the enactment of dispositives and mechanisms. Legal systems are as such a very pervasive force in the articulation of social action. In other words, they are crucial orientations to mobilize social representation and action.

The modernization of the environmental institution in Chile appears in official discourse as a necessary improvement. Chapter eleven challenges this extended interpretation and emphasizes how a conflictive spatio-temporal articulation is

promoted within the environmental legislation. The analysis shows that the transformation in the environmental legislation promotes novel spatio-temporal regimes, which connect directly with two phenomena: i) the exponential growth of the extractive industry, and ii) the reinforcement of socio-ecological conflict.

The discourse analysis distinguishes two spatio-temporal structures that have emerged in Chile as a product and condition of the novel social relation with nature. In addition, and supported by the historical revision, two other spatio-temporal structures can be plausibly derived, and therefore, four periods are taken into account: i) before 1980, ii) between 1980 and 1993, iii) between 1993 and 2008, and iv) after 2008. Each period describes a predominant spatio-temporal structure that reinforces the specific type of action the period requires for its reproduction. Spatio-temporal structures are not conceivable with independence of social action.

Derived from historical analysis, it is possible to describe the period before the 1980s as marked by enlarged spatio-temporal regimes that organize extensive exploitation of natural resources at a constant pace but with significant investment in the construction of space. In some ways this is typically the case of modern industry that not only organizes space for production but also space for reproduction. For the so-called big mining industry in the Atacama Desert, companies are: i) central engines of regional development as a result of the creation of rail, urban and harbor infrastructure, and ii) are primarily responsible for urban development resulting from construction of whole cities, and by provision of social housing, healthcare, and education. Insufficient information exists to evaluate the environmental impact of industrial activity in the thesis, but it seems to be that the companies' high level of social investment compensated for negative ecological effects.

The period between 1980 and 1993 shows the emergence of an enclosed spatio-temporal structure in which single projects are the basis for industrial development but their functions cause environmental damages and public health problems. During this period industrial pollution extended to large urban areas that were built independently from direct industrial investment. Some environmental problems, or the most emblematic legal cases that confront companies and local communities, are decided upon by the Supreme Court (Olivares 2010).

The period between 1994 and 2008 has been described in the discourse analysis as an enlarged and accelerated spatio-temporal structure. During these years a rendering of the environmental conflict and solution as something global and gradual enabled the big growth of extractive industries. The spatio-temporal structure of the period is strongly determined by material conditions of production and the intention to expand the ecological limits of production in what could be called the regenerative capability of nature.

The period after 2008 has been portrayed as a restricted spatio-temporal structure. Acceleration in the extractive industry is not only pursued by material means; in addition, abstract market mechanisms are proposed as a last frontier for speculation. A second wave of large investment in extractive industries appears at the end of the first decade of the 2000s. The discursive dispositives that ensure these economic enterprises are based on very restricted measures of environmental impact concerned only with single projects and their immediate surroundings. Local and regional effects are not accounted for in ecological terms, meaning, environmental and human costs are not fully considered by the environmental institution. The ecological limits of production are enlarged by the creation of market mechanisms and incentives for compliance within the environmental norm.

The discourse analysis has been oriented to describe and analyze the emergence of spatio-temporal structures by emphasizing underlying representations and actions. A step forward, but one not yet engaged, is the analysis of the influence of spatio-temporal structures on social praxis. Beyond what is lacking, the study shows the strong and stable social orientation of action toward extractive industrial growth as the dominant engine for spatio-temporal restructuration. In this context, the discursive transformation in environmental legislation acts as the mediating element.

Part Two Conclusion

Spatio-temporal restructuration appears in equal measure in both social discourses and social practices. As social discourse, the changes in spatio-temporal frameworks can only be grasped by means of a critical analysis of discourses and narratives. Social discourses and narratives are restricted to the prevalent spatio-temporalities and spatio-temporal dispositives proposed to depict social life. At the same time, the dimension of social discourse also engages the use of these descriptions to achieve specific social targets. As social practice, spatio-temporal restructuration is found easily in the changing configurations of social activity: domestic reproduction, mobility in all its forms, industrial production, diverse levels of commerce, different types of communication, and so on.

Connecting the explanation above with the conclusions obtained in part one, a clarification is in order. In the argument, I am not proposing any compulsory linkage between spatio-temporal restructuration as an explanatory device of the social sciences and spatio-temporal restructuration in the discourses and practices of the social institution. This may occur, but it is not necessarily a precondition for this research, and to analyze the connection between social discourses and practices would exceed the scope of this section. Charles Taylor (1992), in his conceptualization of "the good" says we learn about universal rights, moral discernment, and in the end we are capable of ethical action, because of a previous history of dialogical relations or because of the influences of conversation partners in the social context. In this example, the level of action and the level of discourses are not conceptualized as two parallel sources of influence in the individual and the social life. On the contrary, their influences come together in social sciences' explanations, and both levels are articulated in everyday social life. In short, spatio-temporal restructuration in the explanations of the social sciences could be pursued through an analysis of actions and discourses, and the same applies to spatio-temporal restructuration in everyday life.

I began the second part of the thesis by distinguishing different types of phenomena and research projects connected with what I call spatio-temporal restructuration. The outcome of this process was to support, theoretically as well as empirically, the choice

of environmental institutional transformation as a fruitful domain to research spatio-temporal restructuration. On the one hand, legal frameworks and laws make for the basis of democratic institutions; on the other hand, due to their legal enforcement, they have the ability to bind social discourses with actions more strongly than other social representations. Nonetheless, the legal character of environmental discourse is a necessary but insufficient condition for its factual implementation. Building an empirical approach that effectively connects social discourses with social practices or actions is an unfinished task. The empirical proposal has been partial and very selective. Social action has been empirically reported through social discourses, and not directly by me, as a witness. This is a shortcoming found in many research studies, the only exception being ethnographic participant observation.

The empirical work begins with the intention to portray Chilean ecological modernization as a strong vehicle for spatio-temporal restructuration. The underlying assumption of this approach is then twofold: i) the form of the society-nature relationship is a consequence of a primary change in the spatio-temporal frameworks of society, and ii) spatio-temporal frameworks are changing dynamically to support stabilization, maintenance, and change in the social relation toward nature.

As we have seen, the research approach is oriented toward analyzing social discourses and narratives of nature, which both portray different spatio-temporal structures. New spatio-temporal regimes can be mediated by enacting the law. These are the routes followed by the analysis of environmental institutions as "rendering" ecological crises and conflicts, as we observe in the prominent work of Maarten Hajer. One of Hajer's examples says ecological crisis has always been rendered by a predominant narrative that works as an emblem of the overall social conflict. Slowly formed and globally acting issues, for example the case with acid rain in the 1980s, occupy this role today. The global warming concern fits very well with the author's argumentation. Approaching the environmental institution through the discursive dimension allows one to highlight hotspots for socio-ecological conflict but cannot predict its factual consolidation with total certitude. Nevertheless, given the impacts of the discursive dimension in social practice, it is clear that the narrative of spatio-temporal restructuration in environmental law should be complemented with a report on the

socio-ecological conflict emerging as a consequence of the transformation in the society-nature relationship.

Critical discourse analysis and narrative analysis are the two methods used in the empirical research. Both methods are used to underscore prevalent spatio-temporal structures and primary spatio-temporal dispositives at work during the two waves of ecological modernization in Chile. Critical discourse analysis has been used to study the spatio-temporal structures supporting the ecological modernization of the legal frameworks. Narrative analysis approaches the different positions of social actors in the environment field with the intention of comprehending the re-emergence of socio-ecological conflicts. The main point for both inquiries clarifies that ecological modernization represents institutional improvement, but it is also, and above all, the beginning of dramatic processes of productive restructuration that impact local ecosystems and traditional forms of life.

The empirical approach to Chilean ecological modernization as spatio-temporal restructuration was conducted by analyzing three different but interconnected fields. First, the historical context of the ecological modernization was examined by connecting the economic, political, social and environmental spheres in order to compile the main facts and the overall trends shown by the country since the 1980s. Second, the actors' narrative regarding the ecological modernization process was addressed with the intention to deliver a picture of dissimilar orientation existing in the environmental field. The spatio-temporal congruence between opposed orientations for action toward nature was presented as the root of the re-emergence of socio-ecological conflicts. Third, the discursive orientation presented in the environmental institution was observed through analysis of the deliberation process of law. Spatio-temporal structures, legal mechanism, and discursive dispositive were examined with regard to their capability to reorganize the society-nature relationship. All these analyses were conducted with the intention to describe the two major waves of ecological modernization in Chile: the first centralized national environmental Law 19.300 of 1994, and its modification in order to create the Ministry of the Environment with the introduction of Law 20.417 in 2010.

The analysis of the ecological modernization context in Chile demonstrates that this process upholds an intensification of the commodification of nature and not environmental protection. The argument clearly states that the major levels of exploitation run silently inside an external narrative of ecological care. Therefore the following question remains: How does one comprehend the increasing subjugation of nature in a historical context that was never so cognizant of the necessity of environmental care?

In the Chilean case of a return to democracy, contrary to the prevailing wisdom, the restoration of a presidential election and parliamentary deliberation after 17 years of military rule are factors that account for a process of de-politicization in the public sphere. This is the case for all public policies and also the situation of the environmental institution. The analysis shows that major growth of extractive industries, as well as the main wave of public policy privatization, began in the last years of the dictatorship and remains very stable within the democratic government of the past 24 years. The accelerated growth of the extractive industry and regional restructuration of mono-production are the material substratum of the ecological modernization process.

The aforementioned material conditions of the ecological modernization process are clearly rooted in spatio-temporal restructuration. More concretely, it is the social action that embodies the productive restructuration that restructures the spatio-temporal frameworks organizing social life. The expansion of this type of action, oriented toward the exploitation of nature, is only possible by expanding and stabilizing novel spatio-temporal frameworks to coordinate society-nature relationships. In other words, the spatio-temporal structures proposed by ecological modernization are consistent with the accelerated growth of the extractive industries.

For many reasons, this process might not occur without social disapproval. The society-nature relationship as an overall standpoint encompasses antagonistic dispositions, which raises the possibility that latent or existing socio-ecological conflicts re-emerge with renewed strength. Socio-ecological conflicts occurring as a result of the spatio-temporal coincidence of opposed orientation for action toward nature represent one of the main arguments defended throughout this thesis. These

action orientations are attainable and understandable through narratives analysis. During the first wave of ecological modernization, social speech concerning the environment was organized at the macro-scale, while in the second wave this organization took place at the micro-scale. After the passage of Law 19.300 / 1994, enlarged and extended spatio-temporalities were offered as the right way to render the ecological crisis. After Law 20.417 / 2010 was implemented, restricted and constrained spatio-temporalities were proposed as the correct manner to understand the environmental impact. The narrative analysis exposes a selective organization of spatio-temporal structures in which the macro- and the micro-scale have been used to accelerate the expansion of the extractive industry. This process uses indistinctly enlarged as well as restricted narratives of time and space. Consequently, the socio-ecological conflicts have been strengthened in the whole country over the last year.

This brings us back to the basic impetus for analyzing spatio-temporal structuration within a study of environmental institutions. There is clear improvement in moving beyond de-temporalized and de-territorialized accounts of socio-ecological conflict. Spatio-temporal regimes and arrangements underpin much of the transformation in the ecological interpretations of contemporary social life. What is needed is a perspective that brings into focus the interpretations of social reality based on spatio-temporal restructuration. Whenever we do that, analysis shows that the discursive transformation in the environmental legislation promotes distinctive forms of social action. These actions are in direct connection with the spatio-temporal regimes that sustain the exponential growth of the extractive industry, and as a consequence, reinforce socio-ecological conflict.

The discourse analysis distinguishes two spatio-temporal structures for each wave of ecological modernization. The period between 1994 and 2008 affirms enlarged and accelerated spatio-temporal structures. In this period, major growth in the extractive industries is materialized. The ecological conflict is proposed as something global and gradual; therefore, the political answer should replicate this spatio-temporal structure. For the case of the extractive industry, economic development was not influenced by the introduction of stringent environmental standards. On the contrary, the so-called ecological restrictions were reduced. The period after 2008 accentuates a restricted spatio-temporal structure. The acceleration in the extractive industries is obtained by

an abstract mechanism in which the main discursive strategy is a constrained measurement of environmental impact. Only singular effects in the surrounding areas are accounted for in the productive project. Regional and local effects of industrial expansion in the non-urban territory are not reported.

Throughout the second part of the thesis, I have sought to emphasize the argument for the relevance of spatio-temporal restructuration in the modernization process. Discourse and narrative analysis described how spatio-temporal structures emerge by an emphasis on the underlying representations and actions toward nature, both performed socially. My aim will be satisfied if a plausible explanation of socio-ecological tensions is constructed with a base in the process of time and space restructuration. Influences of novel spatio-temporal structures in social praxis have not been completely described in this endeavor. This is, admittedly, a gap in the empirical approach, but the journey has been set, and what is even more important than completing every possible analysis is the development of a perspective that can be used in further research projects. Spatio-temporal restructuration was proved as a methodological tool to conduct systematic research about the social discourses of nature. Time and space structures are clearly an effective starting point for research about socio-ecological conflict.

Conclusion

This thesis combined theoretical and the empirical approaches to what I call spatio-temporal restructuration. Evidence was gathered to support the claim that modernity is defined, and ecological modernization produced, by a profound transformation in the spatial and temporal frameworks of society. One of the basic premises of the argument is the focus on the spatio-temporal structure of social life, and the social sciences' spatio-temporal structures have been excluded from the prevailing sociological theorization. It was my intention then to recover the question for the role of time and space in the sociological explanation, this in the theoretical part of the thesis. The aim of the empirical section was to show that systematic empirical research on ecological discourses could be conducted within this perspective.

Trying to avoid repetition or only to deliver a summary of the thesis's main result, I will direct the conclusion section to a review of the main themes engaged in the thesis, address some problems of theorization, and propose further orientations for research in this area. Before beginning this analysis, I consider in order to devote some words to the question why it is worth writing a thesis on spatio-temporal restructuration? As a matter of fact, I must to confess that I see social life instinctively through the examination of spatio-temporal organization rather than observing other sociological topics that attract the attention of several prominent scholars. Many times, I find myself looking into different, urban or rural, landscapes trying to imagine the common life of those places a few years ago or some centuries before. I watch movies wondering how the histories imply fictional spatio-temporalities, even if the movie is by no means a sci-fi film but a contemporary drama. In the same line, I do believe that my first sociological argument, even before I began my studies of sociology, was to render globalization as spatial restructuration. Spatio-temporal restructuration occurs and it not only implies transformation in social life organization within time and space. On the contrary, spatio-temporal restructuration means the social reorganization of the same categories of time and space.

Spatio-temporal restructuration matters, but it has consistently been hidden. The declining role of spatio-temporal restructuration in sociology has not been intentionally rejected, but its omission has almost become customary. Narratives that

deal with objective time and space or the irrelevance of time and space are both mirages in sociological analysis. The pervasive spatio-temporal restructuration running beneath every social process has become hidden. The return to democracy in Chile is generally referred to as a political victory, but it also produced, perhaps, the most important wave of spatio-temporal restructuration in the country's history. Changes to land and housing property, a transformation of working regimes, intensive construction of infrastructure, concentration of land to private owners, rapid extension of urban areas, and the socio-urban exclusion of groups are highly relevant social phenomena that together make for a better description of a peaceful political transition. Even if it is not belong to the scope of the thesis, a similar account and critique could be made over the events that followed the German reunification.

An initial step in the research was to problematize the given condition of time and space. Many social researchers still consider it true that phenomena simply happen in time and space, and that research on spatio-temporal restructuration would be in vain. On the contrary, the thesis perspective proposes that almost every social phenomenon contributes to the creation, stabilization, maintenance, or transformation of spatio-temporal regimes. In some cases, the orientation toward spatio-temporal restructuration is clearer, and in others the framed condition of action in time and space appears as predominant. For example, going to work every Monday seems to be an action framed by the Western home-work-home organization and restrictions of time and space. But if someone decides go to the office on Sunday and rests at home on Monday, because s/he appreciates a quiet place to work, the individual's arrangement of time and space explicitly challenges extended social spatio-temporal regime. This thesis proposes the concepts of regimes and arrangements to describe the heterogeneous character of the spatial and temporal organization in modernity. Judging from a quick analysis, regimes provide a more stable structure in terms of extension, scope, and duration, while arrangements are more transitory. Nonetheless, the distinction between the two lies not in their spatio-temporal reach, but in their ability to orient and coordinate the social actions that underlie the construction of spatio-temporal structures.

Central to research on spatio-temporal restructuration is its definition as a two-folded phenomenon of accounts in social science and in everyday life experience. Spatio-

temporal restructuration offers a model for epistemological as well as phenomenological research, and this condition runs across the entire thesis argument. If one understands social science as a limited and imperfect description of social reality, it should be self-evident that the epistemological and phenomenological levels are constantly merging. In other words, the distinction between both is more analytical than practical. This thesis has brought the spatio-temporal structures of society into question, and in doing so both levels have been addressed. It is clear that systematic research could be carried out by isolating the epistemological and phenomenological dimensions, but this was not the case four years ago, as the research at that time was directed toward exploratory endeavors. From that perspective, the disagreement discussed in this paragraph between a study focused on social science explanation and a different one concerned with peoples everyday life, it is not a defect but an outcome of the research. Addressing the historical spatio-temporal restructuration in social science explanations, not as an overall catalogue of theories but as a theoretical process based on selective cases, is fertile ground for research that will build on this endeavor.

Theorization entails describing distinctive forms of spatio-temporal restructuration in modernity through a critical review of different theoretical proposals. These proposals all have in common an emphasis on the structuration process of time and/or space in their explanatory devices. I concluded that two spatial and two temporal formations define the boundaries of the restructuration processes described: the macro- and the micro-scale in the spatial dimension, and the accelerated and decelerated spans in the temporal dimension. What was not concluded is a necessary connection between any of these spatio-temporal frontiers. Slow-motion processes or very accelerated ones might achieve the global scale. In the same fashion, acceleration could be obtained at the micro- and macro-levels. Furthermore, no spatio-temporal structure completely governs the type of action deployed within. For Fernand Braudel, the wide geographies and the long temporalities that slowly consolidated were a sort of shelter for the insecurity of life events, especially the uncertainty of history in a concentration camp. The French author would be very disappointed to see how global or regional scales have been utilized by political powers to legitimize threats at the local level. Similarly, scholars concerned with individual or self-narratives at the micro-scale may not agree with an emphasis on this level if the intention is solely to increase social

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inequalities on a larger scale. At the same time, acceleration is certainly not the only threat that democratic regimes have to confront. Political systems also slow down deliberative procedures with the intention of weakening social movements. The analysis of spatio-temporal restructuration requires empirical research and gathers evidence to understand the selective effects on different social groups. No orientation could take this for granted, and therefore it was essential to conduct an empirical analysis.

The approach developed for the theoretical section allows a consideration of issues and processes that are not commonly addressed in mainstream social science analysis. This is the case for the notion of ecological modernization as an engine for spatio-temporal restructuration. In academic literature, ecological modernization has been addressed from many angles, especially those concerning social change, ecological crisis, institutional efficacy, and governance, but never to change time and space. By contrast, I have argued that ecological modernization, while trying to organize a new form of relationship between society and nature, explicitly or implicitly, changes the meaning, representation, mechanism, actions, practices and even the non-thematized routines of social life. All these components of social life are at the core of the stable character –perceived- of time and space and the transformation in these components, it would inevitably influences the spatio-temporal structures.

Spatio-temporal restructuration provoked by ecological modernization is not restricted to the material expansion of environmental problems. In other words, the descriptions of an accelerated territorial growth in pollution sources and an accelerated expansion of extractive industries are both faulty and incomplete characterizations of the present-day spatio-temporal restructuration in environmental issues. An accurate account must report that any material descriptions of the widespread ecological damage runs through the major narratives of environmental care throughout history. Looking more closely at these processes, there is no doubt the issue is not restricted to the physical dimension. Representation of society and nature, orientation for action, and social expectation are broader socio-cultural issues that are of key importance for and relevant to empirical research. In short, the material expansion of environmental problems is inextricably attached to social discourses about nature.

Socio-ecological conflicts, emergence, and maintenance are not only produced by material means. They imply different orientations for action toward nature that come together in the same place, which implies a spatio-temporal coincidence of different action orientation but also dissimilar spatio-temporal frameworks for performing social action. The spatio-temporalities rendered by different social groups are a good starting point to examine the causes of the conflicts. The goal of this research has been to reaffirm the distinctive character of the narratives of nature, and their implicit spatio-temporal structures, as consistent with a comprehensive account of the reemergence socio-ecological conflicts in different parts of the world.

This concern for the re-emergence of socio-ecological conflicts is evidence for the conflictive spatio-temporal restructuration produced by the transformation in legal environmental frameworks. During the empirical part of the thesis, I presented the following chain argument:

i) Ecological modernization affects the social organization of time and space, because it induces a particular relationship between society and nature

ii) This very subtle transformation in the overall organization of time and space is what is understood in this thesis under the concept of spatio-temporal restructuration.

iii) In the Chilean case, the transformation in the environmental legal framework discursively promotes the growth of extractive industries.

iv) The restructuration of time and space, which is the basis of the expansion of the extractive industries in the past 25 years, is in constant tension with the spatio-temporality of the local communities.

v) The reemerging socio-ecological conflicts are the clearest examples of two opposing standpoints toward nature – commodification and preservation – meeting in the same place.

vi) They also represent two contradictory spatio-temporal structures struggling for primacy.

Legal discourses describe time and space in a particular fashion, and these descriptions are not socially irrelevant. One of the major orientations for social action in modern society is founded in the legal corps. We cannot assume that what is

enacted by a law is immediately carried out in material terms, but we cannot doubt the law's performative capability. By focusing on the legal environmental frameworks, I have tried to keep the research close to problems that both local communities and civil society are facing as a consequence of the productive restructuration of the Chilean economy. Interviews and official documents have been discussed in combination with each other, with the goal of locating data in a historical sequence. The argument is not self-evident, nor based on the evaluation of historical processes made by actors; rather, my argument is grounded in a critical sifting of different sources of information, which would allow me to reconstruct the tensions at play in the environmental field. Reliability has been ensured by weaving a tight web of social interpretation around the spatio-temporal orientations proposed by the actors and not primarily their accounts of historical facts.

If this research has suggested a postmodern view of spatio-temporal restructuration, it was not done so explicitly, as the intention was to propose multiple readings of modernity and especially of late modernity. If there are varieties of modernity, then several spatio-temporal structures may coexist. There is no need to move the argument to the postmodern reading in order to claim its plausibility. Furthermore, the view of ecological modernization defended in this thesis is very sensitive to the routes of the society-nature relationship in the international arena. For example, the European type of action toward nature inside Europe, also promoted in other regions of the world, is very different from what we observe in North America or Latin America. Spatio-temporal restructurations take place in a different way in a different context.

This brings us back to the most basic reason for carrying out research on spatio-temporal structures of modernity and the spatio-temporal structures that result from ecological modernization. The impact that novel spatio-temporal structures have in social praxis was not addressed at length in the thesis. Such an impact offers further research possibilities, and these diverse orientations result from the relative newness of the perspective engaged. Once spatio-temporal structures produced by the ecological modernization in Chile are fixed, major progress could be initiated in the inquiry of the types of practices reinforced and constrained by this dominant structure. It is important to recognize the limitations contained in the research proposal.

Nonetheless, the empirical limitations also resemble those criteria and methods often used to do social science research. One of the primary goals was to raise issues, not necessarily deliver single solutions. Problems are better tackled by doing the work that we as social scientists consider right. Throughout the thesis, I have emphasized my argument for the prevalent role of time and space restructuration in social life and in sociological explanation, and if the goal of having the reader consider the possibility of spatio-temporal restructuration was reached, in other words, I am satisfied if you, the reader, consider one need not be a mystic to imagine the possibility of spatio-temporal restructuration. Then this work has been successful in doing what it set out to do.

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Appendix 2: List of Interviewees

Due to ethical issues, and in order to keep the anonymity of the interviewees, the following table only offers general of the interviewees.

	Institution	Type of interview	Duration
	Santiago 2013		
1	Professor Pontificia Universidad Católica de Chile. Environmental Sociology	Key informer Contextualization Interview	Notes
2	Chilean Central Bank. National Accounts	Key informer Contextualization Interview	20 min
1	Environmental Superintence. Responsible for judicial environmental process	New environmental normative in Chile 2010. Legal issues associated to the environmental normative	90 min
2	Chilean Institute of Agrarian and Livestock Development. Director Program of Land Domain regularization	Conflict between extractive industries and local communities in the North and Centre South of Chile	90 min
3	Chilean Commission of Environment (CONAMA). National Responsible for Citizen Participation in Environmental Impact Assessment	Environmental Impact Assessment as the central tool in the ecological framework of Chile	60 min
4	Planning and Development Minister (MIDEPLAN). Geographer. National Responsible for Governmental Enterprises Environmental Impact Assessment	Creation of CONAMA 90s and mechanism of environmental impact assessment for the governmental projects	60 min
5	Full Professor, University of Chile Geography Institute	Creation of the CONAMA and environmental situation of Chile under the ecological modernization (north regional restructuration)	90 min
6	Full professor, University of Chile Institute of Public Affairs	Environmental Chilean report, situation of Chile under ecological modernization	90 min
7	Director Environmental NGO in Chile	Ecological modernization seen from the NGO	30 min
8	High Rank Politician Minister of Environment in Chile	Ecological modernization in Chile 2010 second wave	60 min
	Antofagasta 2013		
1	Responsible of financial institution Head nurse Military Hospital	Contextualization of the socio-economic situation in Antofagasta region	Notes
2	Assistant Professor University of Chile, PhD Candidate Economic Agronomy Purdue University	Contextualization Agriculture transformation in the Atacama Desert	Notes
1	Psychologist Dean of the Social Science Faculty Catholic University of the North	Antofagasta region, social transformation produced by the mining activity	30 min
2	Psychologist, Full Professor at Psychology Catholic University of the North	Social transformation produced by the mining activity in the patterns of immigration and gender relations	30 min
3	Social Worker, Full Professor at Journalism, Communication Department Catholic University of the North	Social transformation produced by the mining activity in the working conditions of the region	45 min

| 4	Economist, Full Professor at Economy Department Catholic University of the North	Emergence of the economic cluster in the Atacama desert	60 min
5	Enterprenuer in Chiu Chiu Aymara community	Aymara integration to the new economic activities	60 min
6	Participant Atacameños Comunity Chiu Chiu.	Atacameños world view of the mining activity	30 min
7	Merchant Calama	New forms of economic activity in the region	30 min
8	Chairman neighbours Chiu Chiu	Social situation in the Andes Plateau	30 min
9	President Atacameños Comunity Caspana	Agriculture community in the Desert	30 min
10	Visitors of Ayquina, Contract worker Calama	Social situation in Ayquina	20 min
11	Tocopilla worker Single mother	Tocopilla role for the minig industry	20 min
12	Contractor worker from Iquique, Owner of aircondition small company	Regional restructuration and services between cities in the area	30 min

Apendix 3: Map, Field Work Atacama Desert
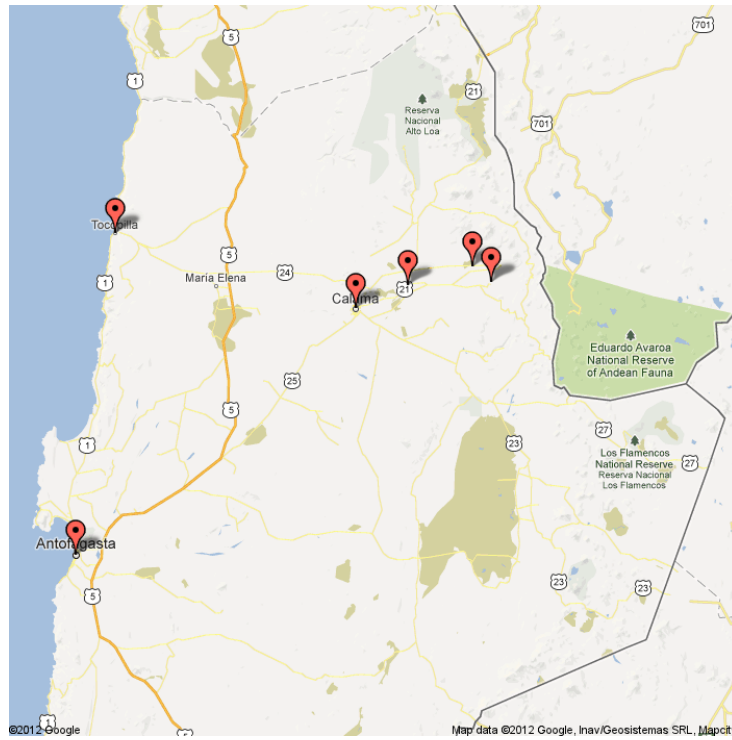
Figure 13. Map Research trip Atacama Desert
Chilean Principal Mining Region
(Antofagasta, Calama, Chiu Chiu, Ayquina, Caspana, Tocopilla)

The Spatio-Temporal Structures of Society: Modernity and Ecological Modernization as Restructurations of Time and Space

Dissertation

Zur Erlangung des akademischen Grades

Doktor Philosophie (Dr. Phil)

Vorgelegt dem Rat der Fakultät für Sozial- und Verhaltenswissenschaften

der Friedrich-Schiller-Universität Jena

von Dipl.- Soziologie M.Sc. Urbanistik. Fernando Campos-Medina

geboren am   22.02.1979 in Santiago de Chile

Ehrenwörtliche Erklärung (zu "The Spatio-Temporal Structures of Society: Modernity and Ecological Modernization as Restructurations of Time and Space")

Sehr geehrte Damen und Herren,

hiermit erkläre ich,

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- dass ich die gleiche, eine in wesentlichen Teilen ähnliche oder eine andere Abhandlung nicht bei einer anderen Hochschule als Dissertation eingereicht habe.

Unterschrift   Ort, Datum