The Social Life of Regions

Salmon farming and the regionalization of development in Chilean Patagonia

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Gustavo Emilio Blanco Wells

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Map 1. The Patagonian Region of Aysén

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The Social Life of Patagonia

How salmon farming contributes to the sites and practices of region-making

> *A fairly large number of social scientists, and not just those whose professional specialty is the region, began to respond in the early 1980s that regionalization was very important, and that it might be more than just another localization pattern: it might actually be central to the coordination of the most advanced forms of economic life today* (Michael Storper 1997: 4).

> *'Regions' are based at times on collective classifications/identifications, but more often on multiple practices in which the hegemonic narratives of a specific regional entity and identity are produced, become institutionalized and are then reproduced (and challenged) by social actors within a broader spatial division of labor. Regions, their boundaries, symbols and institutions are hence not results of autonomous and evolutionary processes but expressions of a perpetual struggle over meanings associated with space, representation, democracy and welfare* (Anssi Paasi 2002: 805).

The Patagonian Region of Aysén in southern Chile has become a hotspot during the last decade. There are many cases to illustrate the increasing attention on this region, but perhaps it is the controversies raised by different social groups over contrasting and contested ways of envisioning its future that has made it more visible internationally. In order to introduce the main argument of this research, let me list four recent controversies that hinge on the progression of economic projects and commoditization processes in the Patagonian territory. First is maybe the most contingent debate, amplified by an intense media campaign during 2008, about the controversial project for the construction of six large dams in the main Patagonian basins by a Spanish transnational hydroelectric power company. Second, only few years earlier, was the plan to install a Canadian aluminum smeltering plant, a project that was temporarily suspended due to the strong resistance campaign articulated by different regional organizations. Third comes the controversial boom of Private Protected Areas owned by different national and foreign conservation land trusts, which have transformed thousands of hectares of land into human-free 'natural' parks. The fourth and main theme of this book is the conflictive geographic expansion towards the Patagonian coast of Chile's largest salmon farming companies[1].

Although these controversies are not completely interrelated they do have a problematic common root in that the central issue at stake is particular and divergent modes of territorial functionality. The unit that 'holds' these economic functions is the *region* and conflicts seem to stem from competing claims and the differential means actors deploy to influence decisions of resource allocation within a regional territory. At the heart of this tension there is a conceptualization of *region* as the geographic space that best coordinates actors, relations and conventions for the *territorial development* of economic activities. Following this line of thought, the region has become a subordinate bounded territory of homogeneous characteristics intended to serve national and global demands through the construction of successful exportable commodities produced by economic actors according to the logic of the comparative and competitive advantages.

In the Patagonian case, those 'advantages' refer to securing the minimal regional capacities to process exportable natural resources or tradable commodities that make the most intensive use of the geophysical conditions of production: hydropower, timber, fish, and 'pristine nature'. At the same time, the region 'must provide' the economic activities and social services to secure the livelihoods of the native population and to sustain its cultural reproduction through persuasive narratives of territorial identity based on the mentioned resources. But, how does this ideal territorial coordination occur? Who are the spokespersons of this entity called region? Even, assuming that there is consensus over its existence and boundaries, who defines the objects of regional development? In fact, if we attend to the disputable character of the projects and processes listed above reflected in the increasing opposition they have generated, one must raise reasonable doubts about their ability to serve the generalized public good and to the extent they represent wider social concerns. Apparently, none of these large projects are seen as properly attending to local demands, taking into account the dynamics of local resources and the heterogeneity of social groups presented in a large and fragmented territory. It seems there is an evident contradiction when meeting objectives of regional development begins with serving the interest of a centrally managed nation-state with an export-based economy such as the Chilean and, lastly, to the interest of large transnational companies and Euro American consumers.

Nevertheless, we should not become confused; these are not controversies that can be simply portrayed as David against Goliath, meaning local versus national or transnational interest. These different economic projects and processes seem to have awaked a 'regional consciousness' articulated by various intra-regional groups and off-region actors. These oppositional movements are also globally articulated and represented by affinity-based groups[2] that defend not only local and regional interests but new sets of universal values such as environment, community, ethnicity, human rights, animal welfare, etc. These groups exert their influence in various arenas that go well beyond the regional boundaries by linking local actors to de-territorialized networks and resources adding further complexities to the formative process of regions. And this is not the only type of de-territorialized relations shaping a region. We are witnessing the constitution of livelihoods and labor relations associated to the transnational flow of commodities where off-region groups, technological objects and practices of international commerce are of crucial importance, not only to the functioning of trade networks, but in the shaping of new social configurations in the regions that integrate these circuits. Even the State, as will see in Chapter Eight, has assumed a brokerage role

aimed to defend trade related interests of regional economic actors through increasingly de-territorialized institutions and active diplomatic lobbying.

Further complexity is added to this picture if we assume that regions are not only under stress from the disputable hegemonic character of new economic activities trading commodities in national and international markets, but that they are constantly redefined by their inhabitants according to the continuities or discontinuities developed with neighboring territories and broader repertories of activities. This means that for people regions are not comprised and defined by strict administrative boundaries but by the matrix of movements and relations that give significance and continuity to their life-worlds. Partly, it is this global connectedness and the always disputable task of delimiting a territory that makes regions a more complex and fluid concept than a geographical layout of fixed boundaries, inhabited by homogeneous 'cultural groups' and ruled by a particular regime of government. Let me momentarily baptize these controversial processes of territorial delimitation and localization of economic activities, resources, institutions and actors as *the making of a region*.

Controversies based in competing claims over territorially-based resources spring up all over the world, which is a sign of the increasing tensions between, on the one hand, the global flows of capital and goods and, on the other, issues of ownership and local forms of accessing resources. These controversies are usually viewed as the side effect of territories whose production systems are functionally oriented to satisfy global demands and, therefore, also vulnerable to changes in markets or investment behavior. Despite certain similarities attributed to these global trends, one should not overlook the fact that they stem from different processes that give rise to site-specific situations. In the case of the Patagonian Region of Aysén, it is worth mentioning that over 83% of the land, about 9 millions hectares, is State-owned and more than 50% of that property is held under the Chilean National System of Protected Areas[3]. Aysén's large public territory includes an archipelago with countless islands, 4.8 million hectares of native forest[4], six large watersheds regulated by five big lakes and the two largest ice fields in the southern hemisphere[5]. If, by contrast, we take into account that the Region of Aysén has the lowest population of all Chilean regions with about 92,000 inhabitants, and that its massive contemporary settlement started as late as the 1920s, then we can gain a better idea of what is really at stake: the appropriation and orientation of use of strategic public resources. Accordingly, in national and international arenas, the Region of Aysén seems to have multiplied the spokespersons that present it as a *Reserve of Life©,* a source of biodiversity and the second most important reservoir of freshwater of the world. However, the particularities of its recent settlement, the features of the current livelihoods and those accounts of the region that tell us how it is experienced, lived and imagined by its inhabitants, tend to be downplayed in order to privilege strategic decisions of the 'highest interest' in the name of the public good. The Region of Aysén, so far, has become an object of intervention.

Is it possible to talk of a *region* as an object having a concrete existence? If so, does a region have a definite form? Preliminarily, we can assume that this region called Patagonia has not been the same through time. Chapter Three is fully devoted to clarifying this statement, but for the sake of this introductory argument let us accept that the Patagonian Region of Aysén has been a changing object of intervention. If we trace the trajectories followed by the region through time we will be surprised by the changing meanings attributed to the geographical entity, which indeed were imprinted in

the various names the region has had since the arrival of the Europeans: Land of December, Trapananda, Potrero de los Rabudos (Field of the Tailed-people), City of the Caesars, Aysén, XIth Region of the General Carlos Ibañez del Campo and today, the oxymoronic Northern Chilean Patagonia[7]. An important particularity of the Chilean case, is that the word *region* acquired a formal use for the territorial planning in the 1960s and later a constitutional status in 1974 when the last reform for the decentralization of the country set the 'Region' as the largest sub-national politico-administrative unit. Thus, Aysén is an overlapping territorial unit made of one of the fifteen regions that compose the Chilean nation and one fraction of the bi-national region known as Patagonia[8], a further complexity that we will attempt to elucidate in Chapter Three. In any case, the progression of human activities, leading first to exploration and settlement and, later, to the economic exploitation of Aysén have created changing patterns of expectations across the centuries that have become imprinted through the life histories of its settlers and the traces of continuous disputes and differences with newcomers and off-region rulers. The region of Aysén has emerged anew from time to time comprising new objects and objectives of intervention, from the search of the mythical Golden City of the Caesars to the modern technocratic web of institutions that view the region as a territorial layout for techno-political management.

Thus, as the subtitle of this introductory chapter indicates, this research is centered on some of the sites and practices that define the form and functions attributed to the Patagonian Region of Aysén. It aims to depict the social life of a region, the becoming of Aysén. I will exemplify this process by focusing on the practices that have led to the installation of salmon farming in Aysén, which I think provides abundant empirical information about how the constitution of an industrial food trade network reinforces the territorial re-orientation of development.

This *regionalization of development* is a process which, among other causes, occurs when agents of economic activities exert influence over public decisions that change the patterns of territorial coordination and resource allocation. In the case of salmon farming this was accomplished by making its performance in international trade networks visible to the point of becoming the predominant export-based activity of southern Chile and the fourth main external trade income of the nation. In fact, some of the case studies of this book delve into the situated practices that have helped Chile become the world's second largest producer of farmed salmon and trout in less than two decades, and relate this process to the marked territorial turn of development that places great value on the integration of regions in international trade networks. I believe that the expansion of the salmon farming industry towards the coastal zone of the Patagonian Region of Aysén is an insightful case study to inquire how the *region* is more than a metaphor of territorial development, but a field of relations providing the matrix of activities, institutions, and social networks that go beyond regional boundaries, allowing certain commodities, discourses and practices to influence decisions of resource allocation and the use of strategic public assets.

In this research, I focus on two dimensions that have recursively contributed through different means to create a territorial field with multiple domains of action: one is the techno-political approach[9] that turns the region into an object of intervention and the other is the phenomenological experience of inhabitating it. In the former approach the region is set through the practices of certain actors that are focused on planning and controlling a regional system of governance. That is defining, managing and ruling the

territorial layout, the economic performances and the social behavior with the objective of maintaining its territorial cohesion and functionality. Under this set of practices, the region becomes a *techno-political object of intervention* with a concrete existence, means and institutions for this aim. By techno-political object of intervention I mean those fields of governmental actions that increasingly depend on the entanglement between technocratic management, entrepreneurial action and scientific experts in order to fix certain realities and justify actions upon them. In this perspective, controversies around the access and control of resources are normally taken as both a precondition of and an effect of interventions, and therefore are necessary for the existence of governmental institutions.

Nevertheless, a region is not only 'represented' or created as an object of intervention, management and control, but it is firstly experienced, defined and shaped by the people who dwell in its geophysical environment. In this research those dwellers are mainly settlers and salmon farming workers who create complex associations and institutions, practice specific livelihoods, perform different routines and rituals, produce identity narratives, and give rich symbolic values to many of their social and environmental relations. In other words, they are also intervening in the territorial layout, but they do so through a wide range of nexuses of activities that give meaning and substance to local and enduring forms of understanding human coexistence.

Following this argument, the central question guiding this research is: **what is a region?** A strikingly simple question, but one that has shown to be elusive and that necessitates further enquiries for a better approach. Hence, the sub-questions of this research are: a) What has the concept of region added to the notion of development?; b) In which ways do economic activities forming part of global industries and trade networks such as salmon farming become constitutive of the regionalization of development?; c) What are the differences between the region as it is represented by experts and intervening agents and the region as it is inhabited by its settlers and workers? If these differences exist, d) How are they created and sustained over time?; e) In which ways are the practices and sites related to salmon farming contributing to defining the contemporary Patagonian Region of Aysén? Finally, f) what is the value of describing the practices and sites that form a region for peoples understanding of wellbeing and democracy? In order to ground these six questions I have chosen to study how salmon farming practices developed in the Patagonian Region of Aysén, because I think it represents an interesting traceable case of the mutually shaping relations between the coming into being of a territorial entity and the changing patterns brought by new global economic activities. In empirical terms it explores this process both ways: how the sites and practices related to the expansion of salmon farming have contributed to redefine the forms and functions attributed to the contemporary *Region of Aysén* in the Chilean Patagonia and, vice versa, how the making of a Region has contributed to the functioning of a global economic activity such as salmon farming. Throughout this book it will be demonstrated that the sites and practices of region-making are not always contrasting or divergent as portrayed in this preliminary analysis, but that often they are entangled and modulated through different interfaces of social action and the continuities of everyday life, whereas at other times they are divided or fragmented and distinctions are made with the purpose of forming separate realms of decisions and authoritative claims to enforce further actions.

In sum, this book is the ethnography of a changing object: it offers an interpretative path that goes from the becoming of the Region of Aysén as an object of intervention serving economic sectors to the manifold forms the region takes as a meaningful matrix for the lives of people. Each chapter tells us something about the various sites where the social life of this region occurs and the multiplicity of practices that constitute it beyond the narrow interests of techno-political management. In the following chapters I will present findings based on an extended case study of the salmon farming activities in their expansion to the Patagonian coast. Fieldwork was intermittently conducted between October 2004 and March 2006. The main location was the coastal town of *Puerto Cisnes,* but the research was extended to multiple sites of interactions following some of the socio-technical networks as they become relevant during the research process. This multi-sited approach led me to conduct research in several locations in southern Chile as well as in Norway, Belgium and The Netherlands. The thesis critically examines a wide scope of social practices that over time have helped to create and transform a territorial entity into a techno-political object of intervention, and relates this process with a shift from the *rural* to regionally-based approaches of development. This *regionalization of development* has become more relevant by the rising flow of global commodities, the new geographies of food production and consumption, and new governmental patterns of resource allocation. The politics of regional development proposes a path to globalization based on the spatial organization of activities and the selective support of actors geared towards the production of successful exportable commodities. However, the direction and hegemony of regional approaches are increasingly modulated through the multiplicity of social groups and local forms that are contesting, subverting or adapting these global socio-technical networks until they are transformed into meaningful parts of their life-worlds. Addressing the multiple sites where the region is created, contested and sustained, the sites where the social life of Patagonia unfolds may be a step forward towards the inclusion of the those actors and practices that give meaning and value to territorial relations Therefore, this book proposes an approach to the democratization of the region-making experience.

This introductory chapter is organized in four sections. The following section attempts to state why salmon farming is a relevant theme for studying contemporary issues of regional development in the current Chilean context. It follows a section in which I explain the aspects that make the Region of Aysén of particular interest for this social research. In the last two sections, I will give an overview of the main theoretical concerns which in the following chapters are threaded together with the case studies. Finally, I present a brief outline of the organization of this book.

The case for studying salmon farming in the Chilean Patagonia

Salmon farming is the set of activities for producing salmonid fish under controlled conditions in order to supply a global seafood industry of increasing demand. In 1981 the world production of salmon and trout amounted to 637 tons in which the farmed fish represented only 3% of this share, making the wild fish catches the most important source of supply. By contrast, in 2008 farmed salmon represented 71% of the 2.667 tons[10] that composed the world production. We can interpret the trajectory followed by salmon farming as paradigmatic in many aspects. First, salmon is an exemplary commodity if we want to describe some of the latest changes in food production and

consumption at a global level. Second, it serves as one of the most illustrative cases of the modern techno-scientific paradox: on the one hand aquaculture sciences have grown around making use of scientific rationality to manage marine resources against the threat of sea depletion by 'irrational fisheries'. On the other hand, it is the target of environmental accusations for polluting freshwater and marine environments and of breaking principles of sustainability when making use of pelagic fish stock to feed carnivore fish. Third, it is perhaps one of the most exemplary activities if we want to describe and analyze how the current Chilean export oriented and neoliberal policies work and, fourth, it provides empirical evidence to understand the manifold and complex relations between private and public agents who place the units of coordination between international trade networks and local livelihoods in politico-administrative regions.

Undoubtedly all these dimensions are tightly interwoven, but for roughly two reasons I have chosen to expand mostly on the latter. Firstly, because this last aspect reflects a long term personal concern with the dynamics and effects that food industries have in processes of social change at a regional level, and, secondly, it is the aspect I had the opportunity to record ethnographically giving a detailed account of actors' practices and livelihoods.

The choice for a case within the food sector is also strategic. Chile is moving fast from exporting natural resources and raw material to being a food producing country with an increasing share of technology intensive capital and the creation of more products with added value (Fischer 2001: 323). As a result, the Chilean economy increasingly relies upon a set of food related commodities which are benefiting from free trade policies and the changing patterns of consumers' world wide. Within this trend, fish farming becomes the newest field of food technology, making Chile a relevant supplier of seafood on a global scale. During the last decade, the advantages of these trends and policies have been strategically appropriated by salmon farmers, in particular through the translation of Michael Porter's concept of *industrial cluster* (Porter 1990). This process became objectified in the creation of a private corporate project labeled the *Chilean Salmon Cluster* (Montero 2004), which obtained important sums of public funds to reinforce the coordination of its territorial expansion. The cluster approach has shown to be particularly prominent in a national strategy of creating public and private partnerships projected to transform Chile into a large scale food producer[11] by linking successful export activities to the development of specific regional territories. This qualitative change in the orientation of Chilean economy has consequences for the formation of new entities, in the use and distribution of resources, information and, accordingly, the accommodation of everyday practices.

Salmon farming in Chile: the transit from success to uncertainty

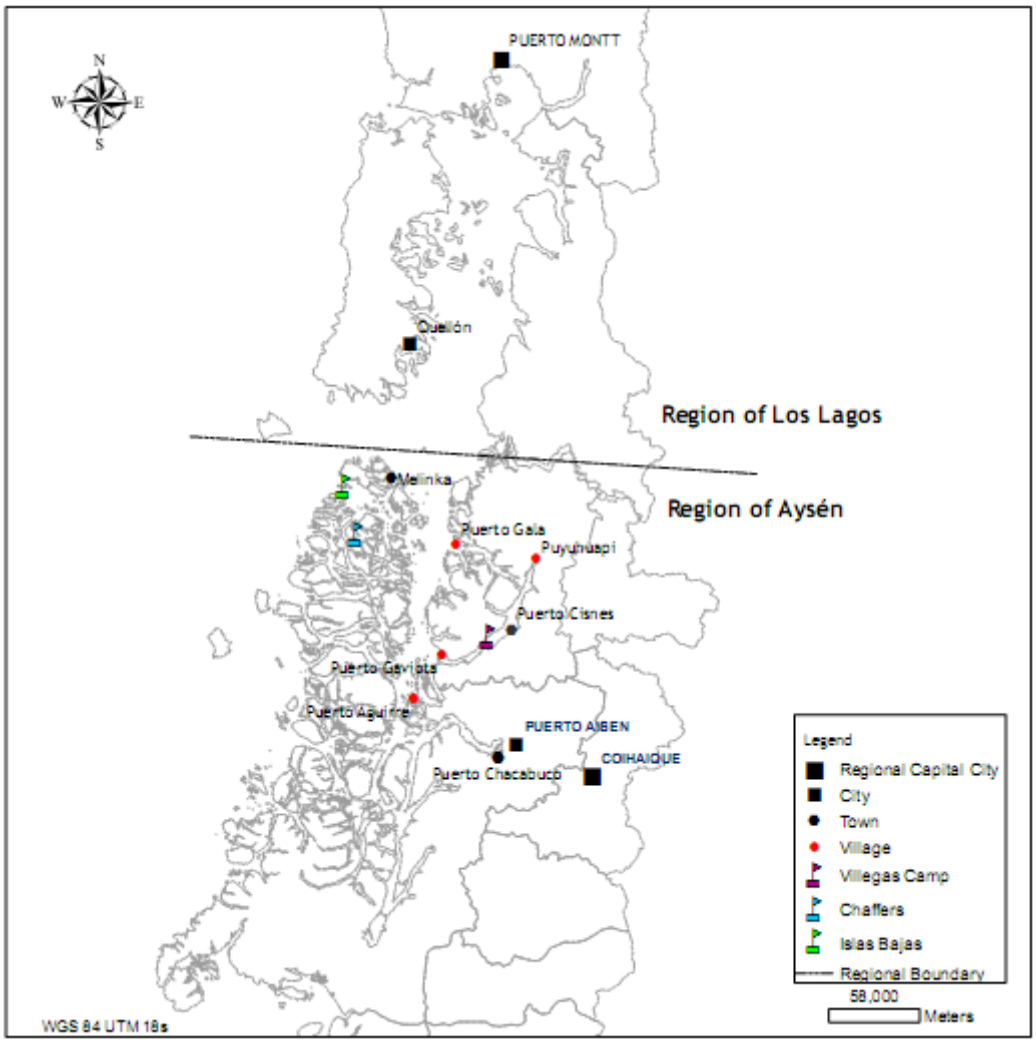
As we will see in Chapter Five, salmonid are not a native species in the southern hemisphere. However, in Chile there are records of attempts to introduce salmon and trout in lakes and rivers that date back to the late XIXth Century. Commercial salmon farming in Chile started as an experimental activity only during the late 1970s and can be regarded only as the last chapter within a broader history of social groups interested in the acclimatization of these particular fish species. The fledgling fish farmers rapidly succeeded in transforming salmonid into an important seafood commodity through the

adaptation of Norwegian and Japanese technologies. From locally owned small and medium companies, salmon farming grew into a large scale industry owned by national and transnational corporations. The fast industrial development of aquaculture benefited from the early neoliberal policies imposed under the dictatorship of General Pinochet, but the combination of laissez faire and entrepreneurial action was not the only catalyzer. Farmed salmon and trout also matched some of the qualitative changes in consumers' behavior in Europe, USA, and Japan that demanded food products whose attributes where adjusted to different lifestyles and the possibility of affording off-season supply (Arce and Marsden 1993).

One big step towards the institutionalization of this emergent activity was taken in 1986, when a group of fish farming entrepreneurs created the Salmon and Trout Farmers Association - *Asociación de Productores de Salmon y Trucha A.G* - most recently branded as *SalmonChile,* that became the main organization representing and coordinating the industrial interests. Since then, salmon farming has been publicly presented as a successful and innovative industrial cluster that provides the economic basis for the local and regional development in previously geographically isolated and economically depressed areas. The dissemination of this discourse has occurred not only through corporate propaganda and press reports (Vergara et al. 2004; SalmonChile 2006), but also through scientific papers (Bjørndal and Kristin 1999; Lindbergh 1999; Montero 2004).

According to data of SalmonChile, in 2008 salmon farming exports reached 657 thousand tons which represented an income of US$ 2.392 million. This volume of production consolidated Chilean salmon farming as the second largest world producer with a share of 34% of the international trade, after Norway with 44% of the world production. According to the Salmon Farmers Association, in 2007, the industry employed 28,368 workers and generated 7,631 indirect posts (SalmonChile 2007). Most of the salmon farming activity is concentrated along the coastline of two neighboring regions of southern Chile: the Region of Los Lagos, including the Island of Chiloé where the core of the industry is located and, more recently, the archipelago of the Region of Aysén (see Map 2).

The literature that traces the history of Chilean salmon farming shows us a fast process of learning and adaptation, often focusing on the ability of salmon farmers to sort out adverse contingencies (Vergara et al. 2004; Våge 2005; Rosales 2006). There are also some works pointing to the strong support received by governmental agencies (Montero 2004) and the influence of under-regulated public policies (Barton 1997). A handful of scientific works on the subject are presented in terms of social or environmental impacts (Claude and Oporto 2000; Blanco and Amtmann 2001; Barret et al. 2002; Gajardo and Lairke 2003; Soto and Norambuena 2004; Buschmann 2005). Nevertheless, among the now abundant literature, one can hardly find descriptions of salmon farming practices located in specific sites, researching concrete social situations and inquiring how they relate to wider livelihoods strategies. With the exception of Barret et al. (2002) and Amtmann and Fecci (2008), there is lack of qualitative information on what this process has meant for peoples' organization of labor and everyday life.



Map 2. Research Area

Several of the sources consulted to trace the development of salmon farming show a tendency to display grandiose portraits of the industry's performance and a celebration of entrepreneurship. But these accounts tend to detach salmon farming from its historicity and local constituency. Using a well known metaphor of social constructivism, literature treated the salmon farming industry as a black box that takes as inputs data of the performance of companies and the adaptation of fish farming technologies, and gives as outputs the positive economic and social impacts reflected in higher rates of employment and the reduction of poverty. These dominant narratives, based on economic indexes and industrial performance, tend to present salmon farming as a good example of rationale choice and competitiveness. In an export based activity it is assumed that success is the adequate combination of two pairs of factors: the private enhancement of *natural comparative advantages* and the use of strategic know-how to create *competitive advantages*. Through these narratives, the representatives of the industry granted the salmon sector a predominant position vis-à-vis other regional activities that are competing for the allocation of public resources. However, in an increasingly

complex scenario of multiple and competing claims, these hegemonic narratives are contested by many other actors, all of which have deteriorated the public and scientific perception of the salmon farming industry through time (Claude and Oporto 2000; Saavedra 2001; Barret et al. 2002; Gajardo and Lairke 2003; Blanco 2004). In this sense, there is an evident lack of embeddedment of salmon farming in the local practices as well as the regional and historical substrate that constitutes the basis for its performance. This is a shortage that needs to be overcome if one attempts to grasp an economic activity as a constitutive part and not as separate realm of social life. Embedding salmon farming in the wider set of practices that sustain its performance is also a necessary step to understand why it has become a contested activity, a terrain of political dispute.

In this regard, a new chapter was added to the history of the industry when in 2008 the optimism of the salmon farmers was crushed by a virus. The sudden outbreak of the ISA virus[12] - Infectious Salmon Anemia - created serious losses obliging the industry to close many farms and drastically reduce its labor needs, with an estimated 10,000 jobs lost during the first quarter of 2009[13]. The ISA outbreak has been associated to excessive geographic concentration – the side effect of the celebrated clustering - and environmental practices that did not take serious measures to avoid biohazards. The crisis has led to the bankruptcy of various companies, the rising alarm of unemployment and State intervention which provided US $ 9 million for temporary labor programs and loans for the financial rescue of the industry of about US $ 120 million.

In sum, the representatives of the Chilean salmon farming industry have built a reputation of successful economic activity based, first of all, on a favorable political environment towards export oriented activities. Second, on its contribution to the construction of a group of international commodities – the many forms of trading and marketing salmon and trout – and, last but not the least, on the effective and organized corporate deployment of its achievements, that is the discursive attempts of constructing a monolithic and uncontestable reality aimed towards maintaining their privileged condition in the allocation of regional resources. But, what is the relevance of salmon farming for Patagonian people? In which way and to what extent has salmon farming transformed the quotidian life of the people of Aysén? After 30 years of fish farming development there is a strong need to ground its significance among the many practices performed by situated actors who have creatively helped, not only to develop the industry but also to dispute its hegemony. A perspective on actors' practices will show us a wide range of livelihood strategies and courses of actions that broaden previously narrow views of regional development.

The following section aims to situate the research in Aysén, the Patagonian region where most of the social processes studied have unfolded.

Disembarking in Aysén

As result of the successful economic performance, in the early 1990s salmon farming companies gained open support from the central government and regional authorities to proceed in the geographic expansion from the Region of Los Lagos towards the southern Region of Aysén. The objective publicly stated by companies was the

enlargement of the production area in order to increase their share in the international markets, but the underlying reasons that triggered this entrepreneurial goal were twofold: the exhaustion of suitable sea site concessions in the Region of Los Lagos and the alarming rise of fish health outbreaks attributed to geographic agglomeration.

The XIth Region of Aysén is one of the fifteen territorial units of the Chilean politico-administrative regime[14] and integrates the bi-national region known as Patagonia (see Map 1). Its contemporary inhabitants called themselves *Ayseninos* or *Patagones*. Aysén was the last area of the national territory to be explored and colonized, a slow process that began in the early 1900s. The colonization of Aysén was the joint result of a national policy that conceded vast areas of land for cattle ranching and timber exploitation and, later, a second wave of settlement by small landholders. The process of exploration and settlement of Aysén, as well as the changing motives behind its occupation are the main themes of Chapter Three, followed in Chapter Four by a detailed ethnographic account of settlers' livelihoods in the costal town of Puerto Cisnes. I will advance some arguments that allow us to position the installation of salmon farming in the situated context given by the regional and local historicity of Aysén.

The difficult geography and climate of Aysén made the contemporary settlement process a titanic endeavor that was extended over a century. Historical records set out that settlers were permanently running short of supplies and, for a long time, public infrastructure and basic social services were non-existent. Nevertheless, despite the geographical isolation, settlers always managed to establish trade networks and made great efforts to place some of their few commodities - mainly timber and cattle - on the market; (Pomar 1923; Ibáñez Santa María 1973). Due to the difficult conditions experienced during the settlement process and the scarce support received from the central governments, Patagonian settlers shared the feeling of being in the margin of national development priorities. These feelings are expressed in a clear differentiation and distance in their relationships with State agents and non local actors, to whom they refer to as *los afuerinos,* and they are embodied in livelihoods and social organizations in which the qualities of autonomy and resilience are highly valued.

The turn to neoliberal policies and the spatial regionalization of the economic activities in the late 1970s found the Region of Aysén with a low infrastructural capacity to integrate commodities in international markets: scattered settlements, low population, lack of adequate roads and ports, one modest airport and very expensive energy. In the 1990s, the favorable political environment towards export-oriented activities and the political opportunism of salmon farmers was crystallized in the highest number of sea concessions ever granted in the archipelagos of Aysén.[15] In this manner, salmon farmers obtained an abundant regional public resource – freshwater and adequate sea sites – and transformed it into a series of relations to produce a set of exportable fish commodities. Thus, within a few years salmon farming representatives claimed to have filled the void of the lack of successful regional exports, thereby positioning a new global trade activity as a central element within processes of regional planning. Accordingly, local authorities, politicians, scientists and entrepreneurs deployed different arguments, texts, images, technologies and people to represent aquaculture as the driving force that would boost regional development.[16]

Nonetheless, beneath the monolithic discursive optimism of the ongoing expansion lays a profound malaise expressed in counterviews and conflictive social situations by the

actors concerned with the side effects of this process. Salmon farming in Patagonia became an arena were many have something to say: settlers who make a living from fisheries and tourism, salmon farming workers, environmental groups, conservation philanthropists, governmental agents, scientist and experts, etc. Salmon farming has created a landscape of controversies that clashed with hegemonic views of regional development driven by the industrial production of exportable commodities.

As will be shown in Chapter Four, the fieldwork experience led me to think of Aysén as the homeland of settlers who strive to make a living through a history that swings between extreme autonomy given by livelihoods that developed in geographical isolation, and constant strategies in favor of more effective political and economical integration to regional, national and global networks.

On theoretical interpretations: modes of ordering and modes of inquiring

In this section, I attempt to explain how researching salmon farming in the Patagonian Region of Aysén has impinged on my theoretical reasoning. However, from the outset I would like to specify my understanding of theory.

In interpretative sciences, theory is the practice of abstract thinking that searches for possible modes of ordering the social realities found through the empirical gathering of information rather than pre-existent frameworks of thought *applied* over a particular case. Nevertheless, these modes of ordering are not only idiosyncratic arrangements made by the researcher, but they may respond to modes of inquiring that are conventionally established in scientific practices. Thus, the process of sociological research normally goes from the fieldwork experience – something that cannot be replicated or generalized but is described and recorded by individuals - to the expressions of this experience. This expression though, is not entirely free and open-ended but modulated through conventions that hinge around the research questions or hypothesis guiding the writing over particular themes of academic interest. In turn, these research questions are answered through the exercise of abstract thinking and the written communication of ideas aiming to find resonance in an epistemic community. But, is it possible to formulate comprehensive questions so as to comprise all the fieldwork experience? If the answer is no, as it seems to be in most cases, what then is the role of research questions? If we agree that hermeneutics construct modes of ordering that act upon and after the expression of ideas, which means that we first express what we experience and that we become aware of the creative potentiality of our expressions only afterwards. Scientific writing then is the practice of taming this expressive thinking through the imposition of modes of ordering which answer certain modes of inquiring. Still, one should not overlook that despite the organization in form of scientific language, the text will never lose its primary character of being the expression of the lived-in research experience. To reaffirm this point, it seems convenient to quote at large the German theorist of social action Hans Joas, whose reflections on expression, heavily inspired by Herder, are indicative of my argument:

> *Herder did not view linguistic expression in terms of some dualistic internal/external model as the mere transportation of an 'internally' preformed content of expression into an 'externally' perceptible form of expression. Rather, the human being who expresses himself is often surprised*

> *by what he expresses and gains access to his 'inner being' only by reflecting on his own expressive acts. This draws attention to two peculiarities of expression which the dualistic model fails to address. Firstly, we form a clear picture of the meaningful substance of what we vaguely have in mind only through our efforts to express it; and secondly, in our efforts to express something, we always present that which is expressed in such a way that other people can appreciate it* (Joas 1996: 79).

All this reflection points to the acknowledgment that the research questions formulated in this introduction are primarily indicative of the expression of the unique experience of this research and the attempts to engage this expression with broader themes of interest for the social sciences. In this sense, this work is not organized in a conventional way, since the whole book is made of essays based on empirical encounters and most chapters reflect, on the one hand, on its epistemological and methodological grounds and, on the other hand, on the conceptual possibilities of ordering.

Through this preliminary reflection, I hope to make clear that the following section is not a theoretical framework, but a brief text that summarizes the most recurring conceptual features and the possible modes of ordering the fieldwork information while keeping a firm foot in the original source of knowledge: the ethnographic experience. In other words, this might possibly be the closest contact zone between my interpretations of fieldwork, the reading of theoretical literature, and the modes of inquiring.

Braiding three theoretical lines of thought

As an effect of the proposed modes of inquiring and modes of ordering, this book cuts across three theoretical concerns: firstly, it aims to unveil some of the practices and processes by which development has been redefined in regional terms creating a territorially-based object adequate to a techno-political approach of intervention. Secondly, and tightly interrelated, it describes the situated constitution of the public and private domain as both an organizing element of modern social life and pivotal source of conflicts. Thirdly, it shows the importance of situating the empirical site of research in social practices in order to stretch the narrow interpretations of social life and extend it to the perpetual *coming to being* of people and things. Let me briefly introduce the overall argument of how I understand the interrelation of these three aspects.

Usually, objects of intervention are not pre-existing entities but agents have to work hard to create and specify those objects in order to render them visible and justify social actions upon them. In development practices these are normally the origin of the units of intervention and of social problems: an impoverished community; a polluted city; a corrupt institution, a failed project, etc. Regions are not an exception. They have become objects, represented in terms of an adequate spatial unit for planning and territorial coordination of actors, and projected in order to grant economic functions. In my view, this *objectification* is a particular feature of modern social life and has become a source to make sharp distinctions between agents of authoritative voices - the experts - and lay people (Daston and Galison 2007). Experts have developed practices that allow their disengagement from the lived experience in order to make a separation of their source of knowledge and their objects of intervention. Thus, supported by professional

backgrounds and technical language experts empowered themselves according to their field of expertise to act on behalf of *others*. These *others* are often regarded as passive recipients and made equivalent to the *human factor* or the *social impacts* of those objects and processes of intervention.

This argument is not new, however, I believe it is relevant for my work that proposes the study of regions by shifting the focus towards the heterogeneous practices that constitute object-making processes beyond a narrow and over-denounced technocratic *developmentality* (Phillips and Ilcan 2006). Indeed, the book goes from the description of particular region-making techniques to the historic processes which allow objects to emerge or be transformed from situated initiatives until becoming an accepted reality in certain public domains, even on a global scale. But, more importantly, this description is done through an ethnographic account of a multiplicity of practices, narratives and social situations that constitute those objects of intervention beyond models of normative and rational actions and without the pretension of discursive hegemony. In this way, the deconstruction of diverse forms of territorial planning is central for this research because the hegemony of certain actors is nuanced through the forms by which local people accept or reject the extension of these interventions in the realm of their quotidian – public or private - life. In short, this book is also about how people, *inhabit*, *imagine*, and *create* the region on a local basis but also through processes and situations that are entangled with extended off-region networks. The views of *region* these narratives offer us have precedence over the mere technocratic approach aimed towards intervention and entail a scientific will to underline the generative aspects of social action and social practices.

The point here is not only to disclose or denounce the creation of regions as the latest techno-political object, but to show that the way this process is communicated and what social practices are taken into account to make the cases has many consequences to democratize the exercise of power. Indeed, we can assume that the creation of certain techno-political objects, such as *regions,* has been of great service to the materialization of global trends of production and consumption linked to market ideologies and not the other way around. In other words, the interpretation I offer reverses the logic of how this regional pattern of resource allocation is normally presented in mainstream literature, that is as global markets that demand certain products from regions that are comparative and competitively superior in coordinating the production and distribution of such goods (Piore and Sabel 1984; Porter 1990; Storper 1997). Eventually, the re-description of the region as it is experienced and organized in the field of situated practices might counteract the sense of facing an unquestionable unidirectional (given) reality. That is why I think weaving ethnography into theoretical lines of thought is not trivial but politically relevant.

Furthermore, central to the conceptual aspects of this book is the call to make the role of researchers visible by adding new viewpoints to certain objects through the explicit reflections about the conditions of the research process and knowledge production. In this way, in Chapter Two I intend to make clear that the path to encountering certain realities provides the context of action of scientific research and thereby has a profound impact on the textual result. Thus, the text may have a dual value: as another brick that gives solidity and texture to the studied object or to express the capacity that knowledge objects have to unfold indefinitely (Knorr-Cetina 2001: 181).

Following this line of thought I present a foreword on the three main theoretical concerns that interweave with the empirical cases of this book.

The regionalization of development

This work is the ethnography of an object or, more precisely, an ethnography of a set of territorially-oriented practices that are constitutive of a spatial unit called Region in the context of the Chilean Patagonia. My interest in studying how a territory became an object of intervention was raised because during the research process I identified that in certain academic and technocratic spheres there was a shift in the spatialization of development from the *rural,* the *urban* and the *local* towards the *territorial* and the *regional*. For those like me, working on issues of rural development, the latter does not imply any claim of the disappearance of rural studies neither does it grant the region and its territorial layout a definite pre-eminence in the new research agenda. It simply states that at a certain level the rural adjective does not contain all the processes, institutions and actors that guide the development interventions in contemporary times. This trend towards the *regionalization of development* resembles a process of black-boxing. That is, the means by which under the term region, there is a number of heterogeneous actors, situations, and practices that are folded and silenced upon the assumption that there is a tacit acceptance on the pre-eminence of certain forms of spatial organization of production. Basically, it is this black-boxing of regions that simplifies the imposition of regimes of governance by certain actors geared towards the technical management of territories.

Regional approaches to development have emerged in correspondence to different theoretical waves in the social sciences. Despite variations on emphasis, most mainstream approaches study regions in terms of the forms taken by the territorial localization of economic functions. The importance of regions in the conceptualization of development can be traced back to the 1950s with two parallel situations: the creation of a new field of studies named Regional Sciences by American economist Walter Isard and the influential Theory of Poles of Growth by the French economist François Perroux. Perroux attributed the source of economic growth to the uneven effects (positives and negatives) provoked by the centripetal or centrifugal forces of a central industrial activity over the economic space or regional subsystem (Perroux 1950: 95). This theoretical economic interpretation was later translated by planners, for whom regions implied the planning of territorial units with a network of subordinate settlements and public infrastructure serving the most advantageous city, whose centrality was given by the existence of those poles of activities (Coraggio 1972; Palacios 1983: 62). Although this approach locates the source of economic growth in the uneven dynamics of industrial firms within a regional space, it does not question that they are primarily serving national interests and capitalist modes of production. In the Chilean case this theory had great influence in the division and planning of the national territory during the 1960s, as will see in Chapter Three (Montecinos 2005).

Later, in the mid 1980s, there was a resurgence of the literature on regions (Storper 1997: 3), in particular to depict the changes in the territorial organization of production associated with a phase of differentiation of global markets, a process generally labeled as post-fordism. The most influential works making this new favorable trend towards regionalism visible was the mode of flexible specialization identified by Piore and Sabel

(1984), the *milieu* approach by the GREMI group[17], and the geographical agglomeration or industrial clustering of economic activities by Porter (1990). To that date, all these ideas were economic interpretations on the role of sub-national units in the changing patterns of production and consumption under the increasing differentiation of global markets. This process of regional differentiation of production created a focus of research on the new geographies and modes of production in which some of the newest and most recurrent illustrations came from the informational economy (Castells 1996), and more recently the works about the new geographies of food production and consumption (Morgan et al. 2008).

The concept of sustainability also has its share in the resurgence of regions, given that it reintroduces the importance of territories in the development equation, when it acknowledges that ecological relations occur in spaces that go beyond the single locality and do not correspond to the rigid boundaries of the nation-state. Most approaches to sustainability place regions on the scale of interactions that best combine the ecologies of territories with the coordination of governance regimes for environmental issues. According to this view, environmental problems cannot be simply left to large unaccountable national institutions and policies or to local folks who are unaware of the complexities of the world's ecology.

In this book I will offer some theoretical reflections on the processes of the regional spatialization of development. 'The region' will have multiple manifestations and meanings; a changing geographical entity, a map made of various layouts, the matrix of movement for its inhabitants, a political unit for administrative planning, and a social field of methodological use for the researcher. In every case the regional framing has been crucial to identify the multiple relations and outcomes created as effects of this territorial pattern of production and, concomitantly, the territorial allocation of public resources. My theoretical reflections on these processes primarily stem from the empirical study of salmon farming activities in the Region of Aysén, but they also represent a trend identified in various contexts and cases throughout the world, with more or lesser degrees of institutionalization (Hall and Stern 2009) or in relation to different economic processes, such as the production of exportable food commodities (Morgan et al. 2008).

Finally, the regional perspective chosen for this research may not be understood as a spatial scale that distances us from flesh and blood actors or might exclude off-region processes. On the contrary, the cases stress the importance of researching face to face interactions within social situations occurring in specific regional locations but also extended to multiple sites beyond regional boundaries. Accordingly, the ethnographic information will be accompanied throughout the chapters with evidence that demonstrates how these objects, localities and practices are also shaped by global networks and remote courses of actions such as the social situations researched in places as distant from Chile as Norway and Belgium.

Development interventions and the changing boundaries of public and private

At the core of the many forms that development processes have taken during the last century, there is the teleological notion of social intervention, which synthesized can be described as the means certain groups deploy to overcome another group' situation,

state or condition (collectively) defined as inadequate. The improvement of *social conditions* in development interventions is based upon the deeply rooted western dichotomy between public and private and in how this binary distinction creates forms by which 'some' impose upon 'others' the definition of *the public good*. In this restless search, the definition of the public interest presupposes a subordination of an opposite realm, that of individuals or private affairs[18]. However, the forms these two domains take in concrete situations of intervention seems to be blurred by the difficulties groups have in defining what belongs to and who is responsible for each domain. Indeed, it seems relatively easy to demonstrate, that *collective* is not a synonym or a condition of *public*, considering that not all collective actions imply a common positive valuation of its effects, neither are *individual* actions equivalent to *private*, since many cases have shown the public character of individual performances. Then, what is meant by public in the first place? Let's explore what pragmatist John Dewey, early in the XXth century, told us about it:

> *We take then our point of departure from the objective fact that human acts have consequences upon others, that some of these consequences are perceived, and that their perception leads to subsequent efforts to control actions so as to secure some consequences and avoid others. Following this clue, we are led to remark that the consequences are of two kinds, those which affect the persons directly engaged in a transaction, and those which affect others beyond those immediately concerned. In this distinction we find the germ of the distinction between the private and the public* (Dewey 1927 [1954]: 12).

This definition shows us that one possible face of the public might be 'something' that represents those actors who although are not present, will be affected by the consequences of certain actions. This led us to assume that the public is the representation of interests and voices of actors that are actually not deciding about themselves. Theoretically speaking, that might be the case in most development situations where the objectives and means of intervention are unilaterally and coercively imposed, or simply never discussed and later presented as being the consequences of inescapable forces of change. They may be also legitimized by interveners and the intervened through different participative techniques which have variable degrees of inclusion. One contention immediately arises from all these assumptions: the public good would be inescapably linked to those who define it, and therefore it is of great importance to check on how these definitions are produced and enforced. Let me quote three statements that come from the salmon farming case in Chile in order to portray a central argument on the following pages:

> *The growth and development of every economic activity is the result of joint actions between the* ***public and private sector****. Participation and co-responsibility have increasingly become the key elements in decision taking processes and policy implementation. Consequently, the strategy of the National Policy of Aquaculture explicitly reckoned the need for the active participation of both sectors* (In bold my emphasis. Extracted from the National Policy of Aquaculture, Subsecretaría de Pesca de Chile 2003: 20; my translation).

> *We judge of high importance the increase of both* ***public and private*** *efforts to grant social sustainability. We have become a point of reference for our Nation thanks to our innovation*

> *and creativity, but particularly for our contribution to the wellbeing of the southern inhabitants of Chile…They are claiming larger efforts. They ask us to be the agents of change, bringing a new socioeconomic reality in a globalized world* (In bold my emphasis. Carlos Vial, President of the Salmon Farmers Association, extracted of their annual report 2005, SalmonChile 2006: 7, my translation).

> *...The State? The State here is only present in those big 'gigantografías' (large dimension advertising for the investment of future infrastructure) and if you want to see what salmon farming has brought to Cisnes go and ask the folks how many of them are working there…you'll count them with the fingers of one hand* (Rogelio, inhabitant of Puerto Cisnes, coastal town in the Region of Aysén 2005; my translation)

The first two quotes are extracted to convey the discursive rationale shared by the representatives of the State and the salmon farming industry on the importance of aquaculture for Chilean development. In these views, the public and the private are presented in terms of *sectors*, meaning the State and the companies: the State as the entity vigilant of the public interest and companies as predominant private economic agents. I selected these statements because they give us a taste of an aspect that repeatedly appears when studying the forms by which contemporary development policies and export oriented activities intertwine in the south of Chile. The research findings made me think of a qualitative change that manifests the emergence of new forms of conceiving, representing and organizing development which are in line with neoliberal policies[19]. These interventions are not entirely defined in terms of public interest, neither as purely private affairs, but are hybrid forms that mediate, execute, redistribute or decentralize the politic action over territories and actors, and, in a more or less planned manner, are triggering substantial transformations. In these hybrid morphologies of interventions the objectives, means, and accountability over actions, seem to be in the form of faded institutional protocols and diffused responsibilities. Paraphrasing Christian Lund, they seem to be in a *twilight zone* (Lund 2006a). It would also be a mistake to frame these new forms of interventions only as a consequence of the retrieval of the State because of neoliberal ideology. As Barry, Osborne and Rose rightly point out:

> *[Neoliberalism] involves less a retreat from governmental intervention than a re-inscription of the techniques and forms of expertise required for the exercise of government* (Barry et al. 1996: 14).

Certainly, the distinction of public and private is not the problem in itself but the reification of abstract generalizations stemming from it that obscure the situated forms by which this distinction takes effect. The currently well-known triangular scheme of State, Market and Civil Society might be a good example of this reification. It is intended to draw a handy but artificial division of the functioning of modern societies. Social life dissected into three fields of actions aimed to different groups: bureaucrats, entrepreneurs and citizens. Ideology in this triangular alchemy is reflected in the role different groups give to the State and the more or less weight they attribute to the 'private sector', whether they mean by private either 'the market' or 'the civil society'. The often unproblematized use of these three broad categories - state, market and civil

society – has contributed to spill a veil of ignorance over its historical and situated constitution, and, at the same time, has emptied the concept of concrete and heterogeneous actors and relations by whom these clear cut divisions are far more entangled in everyday life.

In fact, the third statement quoted above from a settler living in Puerto Cisnes, represents the ethnographic slap. It shows that these new forms of 'public and private' interventions are targeted and contested by lay people as much as previous ontologies of development. The contention developed along this book is that we will get a more accurate picture of these often conflictive social situations if we tackle the theoretical and practical interface between the changing role of the State with the situated collective(s) expression(s) of the public and private distinction. To be more precise, in the study of development interventions we need to explore those controversies, actions, discourses, social and material arrangements that reflect on the tension of what at every historical time and every specific social situation is regarded as belonging to the private domain and/or to the public interest. This thesis aims to show that for Patagonian settlers and salmon farming workers there are other collective and situated forms to define the boundaries between private and public affairs and hence the right to grant or deny actions of intervention in specific controversies may be located in other sites of interactions different than those set up by planners and entrepreneurs.

As usually happens, the controversies created by these interventions at the same time trigger the possibility to interpret conflict as a new space for civic action. It is my contention though, that these disputes reflect a tension that can be summarized by the continuous redefinition of the public and private boundaries of intervention and the constant atomization and reordering of actors struggling for the legitimacy of their claims. The disputes behind intervention are strikingly, if not always, motivated by a conflicting understanding of the public and private domains in specific situations. What can be added by disentangling the disputes about the public and private affairs in social situations? I believe that an empirical and detailed description of social situations and a sharp focus on practices of interventions shall lead us to draw a more realistic picture of the changing role of the State and what is regarded as the private sector or civil society in its locally and temporally situated juncture. At the end of this book, I hope to have empirical arguments to demonstrate the merit of this approach in the study of regional development interventions.

From actors to practice-oriented research

As will be carefully reviewed in the next chapter, this research has been informed by theories of social action, in particular by those inscribed within the tradition of an epistemic community developed in the Netherlands whose central work on social change has been termed Actor-Oriented Approach (AOA). An actor-oriented sociology and anthropology of development, entails taking an ethnographic stance to describe social life in terms of organizing processes and situated actions and an understanding of social change through the study of critical interfaces of interactions in which actors' differences in knowledge, values and power are pitched against each other. In the origin of this approach there is an explicit critique of deterministic and structural views of social life, and instead it proposes to recognize the importance of agency when actors strive to live according to their own meaningful world-views (Long 1992; Arce and

Long 2000; Long 2001). The study of social change through an actor perspective has provided a richer empirical picture of the heterogeneity of actors and social situations in which development initiatives occurred.

Certainly, after almost 30 years of development, the actor-oriented approach accumulated a number of criticisms that will be exposed in more detail in Chapter Two. However, for the aim of this introduction there are two theoretical concerns that I would like to address. First, this research attempts to incorporate in its analysis a revised conception of social action in the light of more recent developments in action theory , and second, it aims to specify why the set of actions we call social practice is the empirical locus of investigation - that is the site of the social - for this research.

In the first place, we must state that action and practice theory share the same lineage. Both *actions* and *practices* have become the name some thinkers give to identify the *primary generic social thing* (Schatzki 2001: 1). The concept of practice is rooted in a robust understanding of social action as the source and vehicle of our capacity to perceive and transform our environment and create meaningful relations. However, the users of these concepts differ in the locus of where these relations more clearly express what makes us live together. The emphasis of social action is on the immediate effects of interactions and inter-subjectivity whereas social practice is mainly concerned with how the *organizations of activities* make our lives intelligible to each other.

In developing this argument, it is relevant to note that actor oriented sociology has emerged not only as a critique of structural epistemologies of social life but also against utilitarian interpretations of actions coming from normative and rational theories. Through its empirical works, this approach released social action from three unsatisfactory types of interpretations: a simplistic cause-effect model, an external conditioning of an internal self, or a single rationality directed towards clear cut ends. Instead, the AOA developed a methodological and conceptual framework to explain the changing character of the meanings of actions according to the richness of actors' cultural repertoires and the variation given by social situations. Despite its assertive critique to teleological and utilitarian theories, the AOA practitioners did not formulate an alternative single model of social action. Here I see the contribution of German sociologist Hans Joas to be of great interest.

To my knowledge, the most recent and comprehensive contribution to the theory of social action is Joas' book 'The creativity of action' (1996). Joas developed his theory based on a critique that aimed to overcome the teleological stance of rational or normative models, that is an understanding of social action that is always intentionally directed towards predefined ends. He found out that both models create a residual category – the irrational and the non-normative – where a great part of human action which cannot be explained is placed (Joas 1996: 4). Instead, he proposed a theory based on the single aspect of human action which does not leave anything out: creativity. Let me quote Joas central argument on this point at length:

> *I do not wish simply to draw attention to an additional type of action relatively neglected to date, but instead to assert that there is a creative dimension to all human action, a dimension which is only inadequately expressed in the models of rational and normatively oriented action. Both these models ineluctably generate a residual category to which they then allocate the largest*

> *part of human action. Defining human action as creative action avoids this problem. It does not engender a residual category of non-creative action, but rather is able to pinpoint the parameters for the meaningful application of the other models of action by illuminating the tacit assumptions the latter contain* (Joas 1996: 4).

Joas replaces the means-end schema of the two other models – normative and rational - by an understanding of perception as embedded in actions being creatively directed and redirected in their situational context:

> *According to this view, our perception of the world appears to be structured by our capacities for, and experiences of, action. Even when we are not pursuing any immediate intention of action, the world exists not simply as an external counterpart to our internal self, but in the form of possible actions* (Joas 1996: 158).

In this approach to actions, it is the 'situation' that replaces the means-end schema of rational or normative goal-setting of previous ontologies of social action. According to Joas, in a non-teleological (non-purposive) approach:

> *It is not sufficient to consider human action as being contingent on the situation, but it should be also recognized that the situation is constitutive of action* (Joas 1996: 160).

In this sense, creative action does not create residual categories since all actions – even those called habitual actions[20] – are generative of new situations or actualize the relations that compose what we call social. Creativity, in this sense, shall become crucial for our understanding of social actions beyond normativity and rationality, because it offers an interpretation in which they are not only attached to the purposive setting of goals or calculated choices, rather one in which most of the time the options are found in the discovery of new means brought by the creative actualization of the present. Thus, social action broadens the scope of means available and therefore constitutes new possible futures, new plans of action that can restructure the scope for present action. It is in the performing of actions that a social situation guides us among the available possibilities. The future is actualized in the present through the endless creation of means that arise from any given new situation. Consequently, in researching development processes, *situations* become central to understand *actors*' agency to creatively cope with changes. How then can the study of social change be located in the creative options of individual actors facing a given situation?

Indeed, some of the persistent critiques directed towards actor oriented perspectives pointed to the fact that the categories of situations and actors on their own do not resolve the dichotomy structure/agency leading, in some cases, to an asymmetric bias towards individual actions and the uncritical use of the category of actor. To a certain extent, it is true that the category of actor has become problematic from an empirical perspective, given the fact that in many cases it is the researcher who assumes the representation of actors' voices in a dubious mandate for becoming their spokesperson. The obvious objection, in simple words, is that we cannot know what we know by stepping into someone else's shoes, but only through the empirical manifestations of

his/her actions and the systematic observation of the most enduring associative forms given by his/her organized activities. Here is when the empirical turn to practices by social scientists gives us a chance to place the accent on the scrutiny of those collective arrangements that allow us to live together, which is equivalent to saying that they proposed a shift in the focus from abstract structures to specific and empirical processes of structuration (Bourdieu 1977; Giddens 1984; Schatzki 1996; Schatzki et al. 2001).

The contention hereby exposed is that in the study of development situations we may identify actors but must also locate in practices the empirical forms by which they collectively organize and re-organize the social and material world. In this sense, the empirical and interpretative breadth of practice theories may represent a step forward for actor-oriented perspectives to avoid the permanent criticism of methodological individualism and to overcome some of the sociological dualisms. It is fair to point out that social practices are not neglected by AOA practitioners, indeed they have become central to their research and the approach provides adequate conceptual tools for its description and treatment.

In this research, my understanding of practice draws mainly from the works of philosopher Theodore Schatzki, who after studying most relevant practice theorists provided a very short but precise definition:

> *[A] practice is a "bundle" of activities, that is to say, an organized nexus of actions. Any practice, consequently, embraces two overall dimensions: activity and organization* (Schatzki 2003: 71).

Practice is then the vehicle of organized actions that allows intelligibility among actors. In turn, intelligibility is the capacity for understanding implicit in the doings and sayings that compose practices. As Schatztki points out:

> *A practice is a set of doings and sayings. Because these doings and sayings almost always constitute further actions in the context in which they are performed, the set of actions that compose a practice is broader than its doings and sayings alone* (Schatzki 2003: 73).

An important related concept is that of sites. Practices do not occur in a vacuum, they are an integrative part of a situational and physical context that is constitutive of social life. A general definition of sites is *where things exist and events happen* (Schatzki 2003: 63). But more carefully disaggregated sites are the situated context, not in terms of spatial coordinates, neither as a general frame of reference, but as the particular location in which meaningful constitutive elements of a certain reality are placed or might occur.

The organization of activities does not necessarily mean fixed patterns or endlessly repeated features but certain regularities in actions and meanings by which, if certain contrasts are produced, can make us aware of the variations that create social change. In this sense, social change may occur when certain accepted practices are challenged or transformed creating new meanings, new sets of relationships and new ways of organizing things that permit the constitution of novel socio-technical networks and

forms of life. In sum, this research provides a strong focus on sites and practices as a way to stress the performative and relational constituency of social life.

Organizing the book:
A style of writing, a code for reading

Almost every introduction is a kind of sketchy road map aiming to guide the reader through the text but also challenging him/her to follow some of the interpretative paths offered by the author. In other words, writing a book is a task of persuasion which in the case of social science is often difficult to accomplish, because it tends to be wrapped in intricate scientific language and it has been agreed to follow long established conventions. Thus, an introduction is expected to contain the core of the complex findings-insights developed as a consequence of the empirical experience provided by the fieldwork and the dive-into theory, but underneath, if you scratch the surface of formal wording, it often reflects most of the researchers anxieties and obsessions as well. I want to make mine explicit. That is the aim of **Chapter Two**, where before elaborating the research theme and the text resulting from the fieldwork experience, I will first uncover the process of entering into epistemic communities and reflect on the extent to which these scientific practices also shaped the research objects. Through an ethnographic approach Chapter Two reflects on a concern that cross-cuts the entire book: that an inescapable step in the research process is specifying the means and aims by which we produce research objects, and that this procedure must be made explicit through a close examination of the epistemological and methodological grounds in which certain knowledge is fabricated.

Chapter Three is about the Region of Aysén. It sets the regional context where a great part of the processes of territorial development of this research have been focused. However, it does not define the regional setting in terms of a geographic description of the territorial container, neither as an account of its natural resources, the weight of economic activities, the composition of human settlements, nor in terms of institutional context. Chapter Three gives us an overview of the changing processes and practices that have turned the region into different objects of intervention for human activity across time, situating salmon farming only as one of the most recent and meaningful activities for studying the contemporary practices of region-making.

Chapter Four places us in the Patagonian coastal town of Puerto Cisnes which was the site from where most of the fieldwork experience unfolds. As specified in Chapter Two this research is multi-sited, but Puerto Cisnes was the ethnographic point of departure that allows me to identify other relevant sites during the research process. Chapter Four reconstructs the constitutive events of the settlement process since the 1940s to date through the life histories of one family that thread changing livelihoods and settlement organizing practices with the rise and fall of different regional economic booms.

Chapter Five describes the changing practices in our relation to a particular fish genre: the salmonidae. Taking into account that salmon and trout are not native of the Chilean rivers, this chapter proposes an interpretation of salmon farming as embedded in a larger process aiming to introduce salmonid species in the southern hemisphere that dates back to the XIXth century. It also discloses unknown cases of experimental

attempts of fish farming conducted by local people from Puerto Cisnes that contributed to the early installation of fish farming in the Region. The cases added information about the local historicity and forms of appropriation that precede the commercial enterprise of salmon farming.

Chapter Six is centered on tracing the constitution of the entrepreneurial and technological networks that interconnect the two largest farmed salmon producing countries. In this chapter, I try to show that the cases of entrepreneurial coordination between Norway and Chile are central not only to understanding the emergence of a global farmed salmon trade network, but that the characteristic of certain technological artifacts also helped to shape and define the salmon farming entrepreneurs in their relations to the State and the markets. The empirical interest in the salmon farming entrepreneur also points towards understanding how the functioning of performative aspects reinforces the process of identity formation in the constitution of capitalist projects.

Chapter Seven is an ethnographic description of fish farming practices from the workers' perspective. The chapter attempts to be a vivid narrative of the living and working conditions in critical sites of interaction for the salmon farming production. The account focuses not only on the organization of production but also on the practices that produce organization understood as the techniques, procedures and activities that helped to create hierarchies, functions and differentiated spaces of sociability.

Chapter Eight follows a case of an external trade dispute between Chilean salmon farming representatives and the European Commission. It provides empirical information to identify practices of lobbying and the brokerage role of the Chilean State to set up networks that dissolve the boundaries between public and private interest. By elucidating some of these politics of lobbying we can gain a better understanding of the contemporary forms by which the State extends particular interest in favoring a determined set of economic actors and relations over others. In this chapter I attempt to demonstrate how practices of international lobbying and external trade also contribute to the making of regions.

Finally, **Chapter Nine** draws the main conclusions of this book. This thesis aims to explore how different social practices and groups inhabit, and transform a territorial entity and create a region. In particular, by exploring how salmon farming practices contributed to redefine the forms and functions taken by the contemporary Region of Aysén. I critically examine the practices that create regions as techno-political domains of intervention but do not reduce the experience of constructing a region from this vertical and hierarchical perspective. Indeed, this thesis shows many other sites that express local forms of regaining, contesting or adapting those practices and transform it in territorial*ities* that are meaningful for people's life-worlds. This research aims to contribute in re-approaching the ways a wide range of social practices are creating or transforming the region beyond the control of experts and rulers through a rich variety of situated social practices. Broadening the perspective of regional development towards locally constructed forms of change can contribute to make visible and build up new opportunities for people's livelihoods and to re-think a more inclusive perspective which gives value to the experience of people.

The following chapters shall be read as an extended case of manifold and often conflicting visions about the forms of and the extent to which salmon farming relates to a politics of regional development. In this case, actors do not struggle over one specific resource, but over a set of territorially based interventions, contingent situations, objects and projects that reflect differences in values and knowledge, which in turn, imply claims to legitimate the right of valuing things differently and, accordingly, of granting or not this right for others to intervene in certain domains of their everyday life.

Notes

[1] The controversies surrounding the development of the Chilean Patagonia listed in this introduction were made public through different symbolic means, press and media campaigns. They are visually depicted in some of the campaign images collected in the figure of Annex 1.

[2] The concept of affinity based groups is taken from Richard Day's work who wrote a book that delves into the functioning of new forms of anarchism (Day 2005: 178). Day' concept seemed of great utility to describe the manner in which certain de-territorialized groups operate in contemporary times. However, I differ with Day' view in one important element: he believes that affinity based groups don't work in fostering universal values, but rather pluralistic commitment to "non-coercive relationships". My argument is that many of these groups defending causes world wide act tactically using the heterogeneity of forms, situations and people but under very identifiable universal claims: a world without transnational companies, a pristine environment, human rights, etc.

[3] The Chilean National System of Protected Areas (Sistema Nacional de Áreas Silvestres Protegidas – SNASPE) has set three different categories that corresponded to perspectives of Natural Resources Management (NRM): National Parks, National Reservations, and Natural Monuments. They implied different degrees of use restrictions but they are all administrated by public agencies (Secretaría Regional de Planificación y Cooperación XI Región et al. 2005: 25).

[4] The total surface of native forest corresponded to 45% of the land use of the Region of Aysén according to data from the National Cadastre of Forestry Resources (Corporación Nacional Forestal 1999: 3)

[5] The six main watersheds are from north to south: Palena, Cisnes, Aysén, Baker, Bravo and Pascua. With the exception of the rivers Cisnes and Bravo, all the watersheds share territory with Argentina. The largest lakes of the Region of Aysén from north to south are: Rosselot, Lago Verde, General Carrera, Cochrane and O"Higgins, whereas the Ice Fields are named Campos de Hielo Norte and Campos de Hielo Sur respectively (Secretaría Regional de Planificación y Cooperación XI Región et al. 2005).

[6] Aysén Reserva de Vida (Aysén Reserve of Life) is the name of the collectivity that agglutinated many of the social organizations that in the early 1990s opposed the transit and disposal of nuclear wastes in the Region of Aysén. In the 2000s they also articulated the opposition to the installation of the Aluminum smelter company Alumysa. After this campaign, the name was symbolically assumed by the regional political authorities and became a catchy brand name for regional government.

[7] An oxymoron is a rhetorical figure in which incongruous or contradictory terms are combined. In this case, I used the term oxymoronic in the denomination of Chilean Patagonia for one reason: Patagonia is, indeed a bi-national region with no fixed boundaries, indivisibly shared between Chile and Argentina. Patagonia therefore is a larger territorial entity that cannot be reduced to one nation or another. However,

the distinction of Argentinean or Chilean is made in particular to remark issues of sovereignty and localization of places.

[8] In the Chilean case there is a further geographic division between the Northern Patagonia, integrated by the Region of Aysén and the Province of Palena, and the Southern Patagonia which is the Region of Magallanes. This distinction is not official and does not have administrative consequences but is strongly remarked by the inhabitants of both regions.

[9] The term techno-politics was coined by Timothy Mitchell in his book Rule of Experts: Egypt, Techno-politics, modernity (Mitchell 2002). Mitchells idea of techno-politics can be summarized in the following paragraph: *From the opening of the twentieth century to its close, the politics of national development and economic growth was a politic of techno-science, which aimed to bring the expertise of modern engineering, technology, and social science to improve the defects of nature, to transform peasant agriculture, to repair the ills of society, and to fix the economy* (Mitchell 2002: 15).

[10] This is data from SalmonChile - the Salmon and Trout Farmers Association A.G. The Association published monthly reports of aggregated data about the performance of the industry in its web site www.salmonchile.cl. All data quoted in this section correspond to the reports of December 2008.

[11] The campaign that goes by the name "Chile Potencia Alimentaria"(Chile, a Food Producer Potency) is directed by a private consortia but heavily financed by the State through different programs supporting export-oriented activities and innovations (For more information about this particular public and private partnership see www.chilepotencialimantaria.cl).

[12] According to a joint report of the Chilean Secretary of fisheries (SERNAPESCA) and the Salmon farmers Association, the Infectious Salmon Anemia (ISA virus) is a disease that affects Atlantic salmon, especially in the cycle stage which takes place in sea water. The ISA virus, as with any other influenza virus, is a highly contagious disease in the Atlantic salmon but does not represents a risk for human health. This virus appeared for the first time in Norway, in 1984 and subsequently in the Atlantic coasts of Canada, Scotland, Faroe Islands and Maine (USA). Chile was the latest country to present an outbreak of the disease. In Chile, the ISA virus was detected for the first time on Atlantic salmon in June 2007 on a farm located in Lemuy Island, Chiloé (Subsecretaría de Pesca de Chile 2008: 3).

[13] The number of job losses was informed by the Chilean Vice-Minister of Labor, Mauricio Jélvez, based on data provided by the Salmon farming industry representatives. The information was published by the Newspaper El Mercurio the 19th of April 2009.

[14] The politico-administrative division of Chile has been streamlined to suit its slim geography. Until 2007 it was composed of 13 regions listed correlatively from north to south each one having a roman number and a proper name. The exception is Santiago, placed at the centre of the country, which is called Metropolitan Region without having a roman numeration. In 2007 two new regions were created. From the division of Region X came the XIV Region of los Rios and from Region I the Regions XV of Arica and Parinacota.

[15] From north to south there are two main groups of islands that belong to the Region of Aysén, they are geographically identified as the Archipelago of Las Guaitecas and the Archipelago of Los Chonos. According to data gathered by Liberona and Furci (2008: 16-18), up to 2008 in the Region of Aysén there were 526 salmon farming sea concessions granted, which are equivalent to 4.176 hectares. But concessions in the process of being granted double this number, reaching 1.141 sea sites with 10.806 hectares.

[16] One of the key instruments guiding the regional politics of resource allocation is the "Strategy of Regional Development" (hereinafter SRD) which is a policy tool made by an ad hoc governmental

technocratic office for the planning of a specific geographical area (in this case the Region of Aysén) during a fixed period of time (usually 5 or 6 years). The SRD included aquaculture as one of the pillars for regional economy. The construction of the SRD is based on management techniques of *strategic planning* applied to territorial analysis and is designed to serve as a political compass for future decision taking. The Strategy of Regional Development enforced during the period of this research was made in 2000 for a six year planning period by professional staff of the Regional Secretary of Planning of Aysén - Secretaría Regional de Planificación (SERPLAC XI) – and relied upon strong technical support from the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), the German agency for development cooperation (SERPLAC XI 2000).

[17] The GREMI is the acronym for *Groupement de Recherche Europeén sur les Milieux Innovateurs*), which is composed mainly by Franco-Italian-Swiss regional economists. As Storper defines it shortly: *the milieu is essentially a context for development, which empowers and guides innovative agents to be able to innovate and to coordinates with other innovating agents* (1997: 16).

[18] Political and social theorist Jeff Weintraub developed a classification of the four major ways in which the public/private distinctions are currently drawn in social analysis: i) the liberal economistic model in most "public policy" analysis and in great deal of everyday legal a political debate, which sees the public/private distinction primarily in terms of the distinction between the state administration and the market economy; ii) The republican-virtue (and classical) approach, which sees the "public" realm in terms of political community and citizenship, analytically distinct from both the market and the administrative state; iii) the approach that sees the "public" realm as a sphere of fluid and polymorphous sociability, and seeks to analyze the cultural and dramatic conventions that make it possible; iv) the feminist analysis that conceives the distinction between "private" and "public" in terms of the distinction between the family and the larger economic and political order (Weintraub 1997: 7)

[19] Particular contingent cases of these new forms of interventions are the so-called Public and Private Partnerships (PPP). Flinders defines it as: *a risk-sharing relationship between the public and private sectors based upon a shared aspiration to bring about a desired public policy outcome* (Flinders 2005: 216). In the critical literature, the PPPs are usually examined as economic forms of neoliberal architecture (Miraftab 2004; McDonald and Ruiters 2006). In the Chilean aquaculture sector the PPP have become a notorious scheme of intervention and resource allocation concerning rural and regional settings. .

[20] Benjamin Dalton suggested that Hans Joas' theory of social action underscores the importance of habitual action and proposed: *a full revision and incorporation of the concept of creative action into our theories of agency requires recognizing the simultaneous presence of habitual and creative elements in all moments of action. Creativity and habit cannot be viewed as separate types of action, no matter how elegant and nuanced the model, nor can one swallow the other such that individuals are ascribed either profoundly limited capacities for action or absurdly unlimited freedoms* (Dalton 2004: 604).

2

An Ethnographic gaze at Methodology

> *The interpretation I offer (the story to tell) is frank heterodoxy or heresy. An advantage of starting with an eccentric point as center is a new radius of investigation. Some kind of displacement like this may be in back of the evolving history of thought and our reach into the future. Pleasure and usefulness derive from novel perceptions, sure to arise from a reversal of periphery and hub. New tales rub uncomfortably against old favorites and often bring suppressed and unwelcome insecurities* (David Appelbaum 1995: X).

I was half way to completing a Masters program in Studies in Science, Technology and Society in Denmark when I received an email from the Head of the Department at my home university in Chile[1]. He informed me that the Faculty had gotten a grant to finance doctoral studies for young researchers within a larger program run by the Chilean Ministry of Education and financed by the Inter-American Development Bank (IDB), aimed at improving quality standards for university education in Chile. In the email, he asked me to turn in an application, so that one of the scholarships might be granted to our department of sociology. The procedure required the presentation of a proposal specifying the doctoral program, working plan, tentative budget and a letter of acceptance from the chosen foreign university, so it was almost a full application. I thought it was a great opportunity, but the problem was that everything was due within two weeks time! The good news turned into a nightmare of anxiety. In two weeks I had to find a university department offering a PhD program of my interest, be pre-accepted, handle some master courses reports and, above all, decide whether living abroad for a long period of time to pursue an academic career was something I really wanted to do, a decision that, at that time, was undermining other personal aspects of my life.

In this chapter, I want to present an ethnographic account on how this book came into being. The aim is not to overexpose my biographical encounter with doctoral studies, but to reflect, through the experience as a researcher, on the many circumstances that made science possible and impossible, and to show how the slow, sometimes difficult, but also joyful, process of engagement and belonging to different epistemic communities[2] not only explains the *Leitmotiv* of scientific work, but defines to a great extent our research objects as well. Entering an epistemic community is doubtless an extension of fieldwork activity and therefore the results expressed in this text are entangled with the broader research project. The encountering of the research objects not only happen in the field, but are partly predefined by our research commitments and, therefore, the task of making them explicit shall be part of the reflexive exercise of writing. Researching in Patagonia and constructing a central theme that could coherently thread issues related to regional development and emergent food trade networks is a

scientific task that does not come out of the blue, but, in this case, is embedded in the researchers training process.

This chapter is an attempt to understand the whole book as a methodological journey that may be described in ethnographic terms, rather than a mere presentation of methods as a tool box selected for a research project. The description of the joint process of entering epistemic communities and the construction of the research project constitutes the basis for an outline of four methodological propositions of theoretical consequences that cross each other through out the book. The main contention of these propositions is that methodology *and* epistemology are fully embedded in situated scientific practices, but, as stressed by the plural word practice*s,* they are also multiple, multi-vocal and not necessarily inclusive of other social practices, which should finally lead us to reflect on the engagement of science with everyday experience.

On becoming a PhD and of PhD-making: Entering epistemic communities

Formal training through doctoral studies is by no means the only legitimate procedure to engage in scientific practice, but by addressing this issue I underline the increasing recognition that being institutionally *entitled* for autonomous research has become a prominent feature of contemporary scientific work. In a contradictory sense, however, scientific practice is becoming more and more managerialised with regard to its methods and standards, which are applied not only to scientific outcomes (publications, patents, conferences, etc.) but also to the training of scientists (number of research projects and postgraduate students). In other words, previously restricted ways of proving excellence in order to become a senior researcher meet increasing proliferation of PhD-making institutions offering manifold paths to entitlement. For some students, PhD titles have become a compelling step towards institutional careers, for others is the well deserved intellectual reward of a life of effort and deprivations, a highly valued social distinction, and for many it has become a badly paid job with flexible working hours. There is a certain tension between the view that users have of PhD studies as a means to achieve something else sometime in the future and the view that university managers have of the PhD as end products of educational services. More graduates means better results for universities (monetary and, yes, maybe also academic). We can feel at ease or troubled with these assertions according to our own personal experience and circumstances, but no doubt it is something to reflect upon, because the procedure does have effects on scientific work. I think there is nothing intrinsically wrong with this institutional trend unless we are not able to stop from time to time and gain as much in reflexivity as in the number of PhD's populating the (scientific) world. At least for the sake of how to read this book, I will attempt to explicit these scientific commitments in the following pages, but also to link this reflection with the process of definition of both the research objects and the methods to study them.

Anyone who has followed the process of doctoral studies may be familiar with the idea of accomplishing a very lonely and unique task. That is partially true, but not completely accurate. Postgraduate studies are inscribed in the practices of larger communities, whose variations on style and form depend on the processual and collective constitution of certain procedures, methods and concepts within specific fields of action: that is the

construction of a differentiated epistemic community. An epistemic community could be defined as a group of people engaged in the production of knowledge, who through specific and accepted practices set rules, symbols, and means to legitimate claims of truth, with science still being the most influential knowledge system of modernity. In other words, an epistemic community refers to people who, in *a given field, make up how we know what we know* (Knorr-Cetina 1999: 1).

Becoming a scientist is a *rite of passage,* a process of encounter with a community of scholars, a strife for belonging while not compromising one's own thinking, and, later hopefully, a long process of differentiation. We all follow through those *rites of passage* with more or less degrees of awareness, but definitively experiencing some of its emotional and material effects. We experience not just the deceit of big failures but, the euphoria of small achievements, we get confused not only about abstract concepts, but about procedures and bureaucratic labyrinths, we work hard to make sense of symbolic performances during fieldwork, but also of ceremonious rites during public dissertation defenses and seminars, we are compelled to deal with large historical periods, but also with quotidian asphyxiating deadlines.

Doubtless, there is place for creativity and distinctiveness, the dream of authorship for every monograph and peer reviewed paper, but many times what is really unique and unrepeatable is the collective process of researching and not its final results.

When entering into a new epistemic community, we have roughly two ways of making the process of ascription clear. The most common option is that one can just assume the conceptual language and the working methods as a given and simply go on by specifying that they belong to certain self-referential groups, via accepting said language and methods as proper. In most cases, this ascription is explained textually through references to the specific influences (always akin to the people with whom we work) and how they stand vis-à-vis other competitive epistemes, something often done through a revision of the state of the art of a particular field, which are generally included in chapters called theoretical and methodological frameworks. Alternatively, one can also reflect on the ethnographic description of the encounter with a scientific practice or an epistemic community (or indeed more than one), something extensively carried out, by scholars of science and technology (Latour and Woolgar 1979; Law 1994; Law 2004). So, if ethnography is a good means to describe fieldwork encounters in exotic places, is not also the sociology department, the place where this scientific practice is crafted, a perfect site to understand it ethnographically? The answer is yes, and that is exactly what I intend to do in the next pages with the aim of disclosing some of the aspects of this encounter that have had great influence in the direction taken by the researcher and the construction of the research object in itself. The purpose is to give this chapter of methodology a reflexive character on the conditions that have made this scientific research possible, and further, it states propositions for understanding how the unique collective experience of researching is translated to specific and provisional forms of stabilizing a phenomenon.

The following narrative combines an ethnographic description of the research process at two given moments: the decision to join a specific PhD program and, later, the writing of the research proposal before undertaking fieldwork. In between, I developed a brief historical investigation about the academic group that developed an Actor-Oriented Approach to social change and a critical review of its conceptual foundations.

Finally, I set up four methodological propositions that will be developed empirically throughout the book.

Following tenuous clues

I became involved in teaching and research in the field of rural development by collaborating with the Department of Social Science at the Austral University in Valdivia, southern Chile. My first post was as fieldwork coordinator for graduate students running a development project in rural communities of the Island of Chiloé. Later, I began assisting lecturers in the teaching of rural sociology. During my first years of academic work I received a copied version of the early book of Norman Long "An Introduction to the Sociology of Rural Development" (1977), as a result of an informal conversation with one of the senior sociologists I worked with. I remember reading this book and finding Long's criticism to structural approaches and his phenomenological proposal for studying rural life appealing. That was probably the first clue that clinked in my mind when, a couple of years later, during a scholarship spent in Roskilde, Denmark, I was faced with the urgency of looking for a PhD program in the field of the sociology of development.

Compelled by the grant application deadline, I found myself racing after doctorate programs and being particularly interested in contacting Norman Long's group at the Wageningen University in the Netherlands. After a short bout of internet surfing and quick email exchanges, I was informed that Professor Long had recently retired, but got in contact with one of his closest collaborators, Dr. Alberto Arce, a senior lecturer whose research interest was Latin America. In order to make an informed decision, we set up a meeting in the city of Wageningen. Given that my first step was traveling to the Netherlands, I managed to schedule a second meeting at the Institute of Social Studies (ISS) in Den Haag to explore another choice within the field of development studies. I flew to the Netherlands and spent one week swinging between meetings and learning everything I could about the Dutch way of living, university facilities, means of transport, living expenses, residence permits, etc.

I first went to Den Haag and two days later to Wageningen. I remember being particularly aware of the means of transport, travel times and city services through long sightseeing walks. Both meetings occurred at the researchers work places and also included a walk through the building facilities and being introduced to the Professors who were heading the departments and some the other members of the staff. The talks progressed from politeness to open and friendly conversation, probably facilitated by the fact that both senior researchers were indeed Chileans and spoke Spanish. The meetings were very informative, not so much in terms of specific procedures, but in the scope of the academic orientation they could offer and the strengths or constraints coming from their different institutional settings. I saw both meetings not as probes, but as an open

exchange between what I could offer, both intellectually and financially, vis-à-vis what I could receive from different styles of academic guidance.

The decisive turn in making a choice came during the discussion of how my research interest could fit in with the guidance possibilities of the academic staff. Significantly, both scholars touched upon this aspect asking about my publications. At this point, what made a slight, but decisive difference was the degree of freedom and flexibility to imagining a research project that could match their research agendas and my brief research background. In one case, the scope to find a joint research interest was narrow, given a more rigid pre-established theoretical perspective and strict time and resource framing, which in the case of my scholarship would imply several restrictions. On the contrary, at the meeting in Wageningen, there was less emphasis on theoretical aspects, but more interest on the research theme and my disposition for fieldwork. During this meeting, I felt a higher level of flexibility in finding coinciding points of interest with the supervision and openness of flexible arrangements between fieldwork and living in the Netherlands. As important as the formal meeting was the time spent together walking across the small city of Wageningen and having a beer on the terrace of a bar on a sunny autumn day, which gave me a taste of the local student life.

This meeting was my first face-to-face encounter with Actor-Oriented Approach (AOA) practitioners. I remembered having the feeling of having met people working within something that appeared to be a school of thought, but, of course it did not dissipate the main question: what was it about? This encounter was followed by an exhaustive and detailed process of study which recurs not only in the produced texts, but in an investigation on how it was that this group of researchers became an epistemic community.

Approaching Actors[3]

> *"[A sign, a word gives] orientation in the particular given context, and particular given situation – orientation in the dynamic process of* ***becoming*** *and not "orientation" in some inert sense"* (in bold my emphasis. Voloshinov 1986 quoted by Shotter and Billig 1998)

The Actor-Oriented Approach to development emerges from dissatisfaction with structural views that grant a passive role to social actors during processes of interventions and social change (Long 1977; Long 1992). The criticism was aimed to those structural approaches that, although stemming from different ideological camps such as neo-marxism or modernization theory, left little room to explain the heterogeneity of social life. In Long' words:

> *[T]he two models are similar, in that both see development and social change as emanating primarily from centres of power in the form of intervention by state or international interests*

> *and following some broadly determined developmental path, signposted by 'stages of development' or by the succession of 'dominant modes of production'. These external forces encapsulate the lives of people of the Third World, reducing their autonomy and in the end undermining indigenous or local forms of cooperation and solidarity, resulting in increased socio-economic differentiation and greater centralized control by powerful economic and politic groups, institutions and enterprises…Both models are tainted by determinist, linear and externalist views of social change* (Long 1992: 19-20).

If we situate this critique in the late 1970s, we will understand the particular juncture that was levering novel epistemic standpoints in social sciences. Kuhn's concept of scientific paradigm, the philosophical rise of phenomenology and the interpretative stance of social constructivism paved the way to channel this dissatisfaction through the essay of new ideas among some scholars working on issues of social change. They were not only contesting mainstream academic discourses, but proposing an interpretation of social life *from below,* placing at the center actors' agency to cope with changes. Thus, since the early 1980s we can identify a series of scientific works that became cornerstones of an empiricist and phenomenological approach to development, but the less known process behind the construction of these research agendas is also of importance in understanding the scientific networks that were given support and helped it spread as a singular academic perspective.

As most epistemic communities working within academic environments, the AOA to development is composed of certain practices that give continuity to previous lines of thought and research agendas, as well as representing discontinuities and disruptions coming mainly from alternate formulations of social research and the internal differentiation of its practitioners. In sum, the AOA is an academic speech composed by heterogeneous elements and founded in the practices of a group of scholars, which has been permanently refreshed and challenged by the progressive adscription of followers, mostly by coming to pursue doctoral studies from all over the world. How does this research group originate?

Battlefields of knowledge: moving beyond the 'West' and the 'Rest'

The study of Rural Development in Wageningen has its roots in a colonial division of sciences in the Netherlands, in which everything outside the Euro-American culture was termed as 'the tropics' – *tropen* - and translated to English as 'the Non-western'. Thus, in 1955, the Department of Rural Sociology of *Non-Western* Countries was created under the Chairmanship of Professor R.A.J. van Lier. Later, in the early 1980s and headed by the recently appointed Professor Dr. Norman Long, the group was renamed as Sociology of Rural Development, as a clear indication that the distinction western/non-western was troublesome and outdated given its strong colonial connotation. This nominal change and the appointment of a British Professor also coincided with the beginning of a process of internationalization of Dutch universities through which many programs launched postgraduate courses in English.

To certain extent, the Rural Development Sociology Group of Wageningen headed by Norman Long in all fairness can be regarded as a diaspora of the Manchester School of Social Anthropology from the times when it was chair held by Max Gluckman[4]. Long

himself trained in this school and his thesis "Social change and the individual" conducted in Zambia was guided by Gluckman in the late 1960s. Long has the merit of extending the Manchester School of research focus on social change to the ethnographic study of rural development projects. Once in Wageningen, Professor Long recruited other staff members that were trained as anthropologist for the renovated Sociology Department. In this way, they formed a small but critical mass particularly skilled in ethnography and the methodologies of social research perfected by Gluckman and his students.

Of course, we cannot reduce their work to the methods of the Manchester School, there are many other recognizable major influences, but its analysis goes well beyond the objectives of this chapter. However, we need to mention that the AOA, as its name indicates, is indebted to an extended lineage of intellectual work that has theorized social action. Alfred Schutz' phenomenology of the life-world, the social constructivist perspective of Berger and Luckmann and the early work by Giddens, who gave primacy to the concept of agency, has been all influential inasmuch as they impregnated the working language of the AOA practitioners.

The research project in Mexico: an epistemic community in practice

The AOA has always privileged the fieldwork experience before the work of abstracting research and teaching lessons from social situations. Indeed, it was the fieldwork done in the highlands of Perú in the early 1970s that made the work done by Norman Long so interesting and anticipates many of his long lasting concerns for creating a methodology to approach development interventions while not compromising and loosing track of the multiple ongoing processes of social life. Working with fellow researchers and creating ties with collaborators in the field may well have been a first step in the process of constituting an epistemic community. In this regard, there is an important turning point that in the long run, united the work of senior and junior researchers through the ethnographic practice: a joint research project developed in Jalisco México from 1986 onwards. The project, titled "Contrasting Patterns of Irrigation Organization, Peasant Strategies and Planned Intervention", was co-financed by the Netherlands Scientific Council for Tropical – Non-Western - Research (WOTRO) and the Ford Foundation, and was affiliated to El Colegio de Jalisco. The project provided the support needed for a scientific team of various nationalities and disciplines to carry out joint research in a common region and set the empirical basis for the methodological refinement of the AOA. During this period, most junior researchers had the opportunity of doing extended fieldwork, while at the same time sharing the proximity of senior research fellows working in the field. It became a time to take methodology from the textbook and put it to practice by facing daily enquiries, using their social skills to approach their research objects and choosing appropriate ways of recording what was observed. Methodology was fully embedded in the quotidian practice of coming to grips with multiple realities, while not getting lost - at least not always - among the abundant information and experiences.

As result of this fruitful period of joint research there were a series of works written in the 1990s that lay the empirical and conceptual basis of an Actor-Oriented Approach to rural development and helped to make it widely known among scholars interested in social change. The core of this work was printed in two collective books edited by Long,

Encounters at the Interface (Long 1989) and, together with his wife Ann, *Battlefields of Knowledge* (Long and Long 1992). The project also gave way to a number of seminars and a series of doctoral theses (González 1994; Villarreal 1994; Verschoor 1997; Vries de 1997; Nuijten 1998).

The participants in the Mexican project were united by a shared understanding - not to be confused with monolithic thinking - of the practice of ethnography as the best approach to study the heterogeneity of social life. The whole process of becoming an epistemic community was based on the sum of actions that made this collective experience possible and extended it to a long term research agenda, that turned out to be appealing to many novel researchers. But, what are the conceptual cornerstones that emerge from these early empirical works?

De-constructing practices of intervention: opening the AOA black box

The Actor-Oriented is not a theory but a methodological approach to the social world. Nonetheless, it has a clear epistemological standpoint that has influenced a large number of social scientists working on issues of development and social change: the meaning of social action and practices cannot be dissociated from actors' life-worlds, the complexities of everyday life and the particular situations in which they occurred. In consequence, our *understanding of social change* will *depend* largely and indeed will be an *effect* of the capacity of interpreting processes of intervention through ethnographic means. Thus, central to this approach are the study of livelihoods, indigenous and local knowledge, kinship and social networks and, overall, how these collective relations and assets converge in actors' agency to cope with any given social situation. Within this perspective there are multiple realities and thereby conflicts arise precisely because of the different and heterogeneous ways in which actors interlock or distance their quotidian life to the many forms that social intervention could take. Actor-oriented sociology and anthropology of development as practiced in Wageningen, is grounded in the conviction that actors may exert agency not only to define their own critical events, but also that:

> *[A]ll forms of external intervention necessarily enter the existing life-worlds of the individual and social groups affected, and in this way they are mediated and transformed by the same actors and structures* (Long 2001: 13).

Thus, the so called external factors (e.g State programs, transnational corporations or new technological systems) are internalized, mediated and transformed through local arrangements and organizing processes. An actor oriented approach thereby calls to take into account the multiple realities of social life as the heterogeneous basis from which differential responses to change are drawn upon.

In methodological terms, the AOA proposes a series of metaphoric concepts that, when applied to development projects through rigorous ethnographic work, are not only able to depict practices of intervention beyond the continuities of the processes, but also of focusing on the discontinuous aspects of social life, conflicting interfaces, and the situated production of new organizational forms and entities (Long 1992; Arce and Long 2000). The research born from this approach has allowed the deconstruction of

different processes of intervention and through its analytical and heuristic use has demonstrated that most projects generally fail when planned visions of development become hegemonic and do not consider the wider variety of livelihood strategies and the heterogeneity of social situations. A great deal of the research within this approach has been devoted to demystify the apparent monolithic consistency of development projects in Latin America, Africa and Asia through the detailed description of relations and practices between State agents, bureaucrats, leaders, scientists, entrepreneurs, NGOs practitioners, peasants, women and various other local actors, shining light on the rich and complex texture that composes these processes.

One of the main analytical tools created and worked out for this group is the concept of *social interface*, which conveys the idea of an arena –or arena's- where actors dispute their different interests and meanings over a specific process of intervention. Norman Long's definition is as follows:

> *Hence I define a social interface as a critical point of intersection or linkage between different social systems, fields or levels of social order where structural discontinuities, based upon differences of normative value and social interest, are most likely to be found. The concept implies some kind of face-to-face encounter between individuals or units representing different interests and backed by different resources* (Long 1989: 1-2).

In other words, social interface is the critical point of intersection where discontinuities among different life-worlds "are most likely to be located" (Long 2001:243). The interface analysis has been widely used through empirical case studies in a broad scope of issues. However, due to its deconstructive stance, the AOA in practice have never sought to establish normative or programmatic elements, on the contrary, it has encouraged research that celebrates diversity and plurality aiming to place social life at the center of scientific research. Thus, instead of the normal goal-oriented perspective of planned intervention that aims to reduce uncertainties, the AOA disclosed the entanglement of interests and meanings that made intervention a complex process, difficult - if not impossible - to control and tame.

In sum, Norman Long's Actor-Oriented Approach has become an important contribution to the study of rural development throughout the world. Its strength lays in that it has been made up of numerous cases studies, done by him, his colleagues and students of Wageningen and, through the heuristic use of a conceptual tool box for deconstruction, has become an assertive means of depicting the heterogeneity of development practices, social discontinuities, counter-tendencies and 'mutations' (Arce and Long 2000: 18). The merit of an AOA is that it has reaffirmed scientific practices that make us understand processes of social change as actors' arrangements to create new forms of organizing their lives.

Dis-oriented Actors

Scientific groups, as with any other field of human activity, face dynamics of change that over time could slowly dismantle real or apparent internal cohesion. This process of differentiation could be triggered by a number of factors and marked by diverse

episodes in the history of an academic group. In this sense the research team identified by the AOA is not an exception. After the retirement of Professor Long in 2001 it has followed an ongoing process of adjustment and differentiation headed by a new Professor and the work of senior and junior staff to legitimate the construction of their own academic style and research agendas.

Concomitantly to this process of internal differentiation, the so called 'development crisis'[5] that emerged in the mid 1990s unveiled some of the implicit preconceptions beared by phenomenological perspectives of social change and made the AOA practitioners the targets of a variety of criticism. The AOA has been accused of methodological individualism, of crafting a self-referent working language, of relativism, of human centeredness, and of encouraging liberal interpretations of social problems. Some of these criticisms have been taken on board (Arce and Long 2007), but much of it is due to insurmountable differences over theoretical standpoints. In any case, far from exhaustion, the proven advantage of its methodological strength still shows its legitimacy given the large number of new research agendas based on this perspective that have grown outside Wageningen. This means that the criticism questioning the scientific practices and results of this group is not necessarily a threat to the larger epistemic community that has found resonance in this approach. Indeed, the scientific practices related to the AOA have shown certain malleability that extend beyond the limits of influence of one specific group and gain strength in new hubs of research (Feito 2004; Kontinen 2004; Lund 2006). In this sense, there is a clear legacy, where renewal depends more on the impact the AOA made in a larger community of scholars working on issues of social change, than in the internal cohesion of its original research team.

In this section, I will briefly tackle the main criticism that the AOA has faced over time and to show how this process of questioning not only relates to the properties of a theoretical stance, but to the dynamics of human groups and scientific practices.

The first aspect that became an object of critique is the progressive 'solidification' of the conceptual language used by AOA practitioners. This feature has been pointed out by the French anthropologist Jean Pierre Olivier de Sardan (2005). Indeed, the AOA has always emphasized the centrality of ethnography and the outspoken importance of the empirical over the theoretical. However, its practitioners tend to downplay the active process of discursive construction and the conceptual trajectory that has helped this research group go beyond the 'local' scope of action. In this sense, the conceptual tool box of the AOA has been criticized for becoming a jargon which, when repeated over time began to be used as fixed categories by its followers. According to Olivier de Sardan:

> *His primary concepts […] have been established in the mid-1980s, and have been cited, commented on and paraphrased, by Long himself and by his disciples, in articles and books for over fifteen years with hardly any modification. This very abstract system of interpretation […] has gradually evolved into an almost hermetically closed loop, while its empirical studies sometimes give the impression of being tailored to illustrate or to justify its 'guiding concepts' instead of producing innovative local or regional interpretations or of opening new perspectives* (Olivier de Sardan 2005: 13)

An example might be the concept of *social interface*, which despite its flexibility has the limitation of depicting struggles over meaning, through an abstract category which is outside the realm of everyday life. Therefore, when social controversies are presented in terms of differential practices occurring at the *interface* they become encapsulated within a working-language and wrapped in a cognitive veil for analytical purposes. Nonetheless, the need to build an analytical vocabulary should not be seen as a problem, indeed it is a common and extended scientific practice within social sciences, but by being repeated over time might transform the heuristic use of concepts in 'something' close to having a concrete existence and its practitioners may become more concerned with filling in those categories with empirical data than in fully understanding the pertinence of using them to capture certain phenomenon. Even the category of actors, central to this approach, is unquestioned in certain cases, becoming a black-box in itself, where no methodological explanation is given to specify the conditions in which the researchers have made of certain social groups and individuals an actor. This point was already touched upon in Chapter One, where I emphasize the need of a methodological move from actors to practices, since nexuses and activities that relate individuals and groups in meaningful ways are the only observable aspects that could form sociological knowledge.

A second aspect of frequent criticism is that the Actor-Oriented Approach is part of the postmodern stance that de-politicizes social relations by detaching them from the historical context in which they occur. In developing this critique Araghi and McMichael wrote:

> *[Postmodern approaches] de-politicize rural studies when they privilege "actors" at the expense of the time-space context (and not only actors' immediacy). An example of this is the school of Wageningen, which is known for its constructivist emphasis on differentiated agricultural styles as opposed to deductive trajectories of social change. The need to recognize and understand this differentiation is welcome, but the point is not limiting actors agency as observed* ***in*** *history rather than* ***like*** *history* (In bold authors emphasis Araghi and McMichael 2006: 26, my translation).

They argue that the main element that contributes to de-politicizing of social relations is the fragmentation of reality given by the embracing of localism, something they called abstract localism. According to these authors, the abstract localism of postmodern studies *celebrates diversity over unity, privileges cultural or geographic differences and sets scales of observation where actors may emerge,* but tends to forget that the micro-macro relations are equally formative of each other and that they depend on time-space coordinates forming a world-system (Araghi and McMichael 2006: 25). Given the disposition to understand the social phenomenon from the way actors live and represent the world, the AOA embraces an epistemic posture that entails situating the site of research at the local level in opposition to predefining the structural – historical and ideological - determinants of social relations. Because of this, the AOA has been accused of promoting a liberal interpretation of society that does not problematize issues of subordination, class formation and asymmetries of power.

However, a cautionary note is needed about this critique, in particular because it comes from a theoretical perspective – the world-system - that understands history as meta-accounts of human process, with little room for variations on interpretations over large

historical forces. The world-system perspective discloses the general ideological conditions that determine social relations in a very universal – western like – sense. That is exactly what the AOA was explicitly trying to overcome. In Long's words:

> *The same [determinism] applies to historical approaches that search for simple causal/structural explanations situated in the past. History never relates in a unilinear or uniform way to the present and future. As Kosik (1976) has made clear, their relation is essentially dialectical, involving both elements of the possible and the real. That is, history always contains more than one possibility, where the present is the realization of only one of these; and the same holds for the interrelations between the present and the future. What is decisive for Kosik is praxis, or in my terms the process by which actors' projects and practices interlock and interact to produce emergent forms or properties* (Long 2001: 62)

In this sense, the AOA treatment of history reflects on these large socio-economic processes not by neglecting them, but through the empirical investigation of social practices and their material basis in the context of everyday life. In a way, it follows an anthropological tradition that grounds history in its local constituency and is interpreted through a variety of methodologies: life histories, genealogies, extended cases, symbolic studies, rituals and kinship (Turner 1975). They all provide us with an enacted and embedded history, which tells us how people situate the larger context through specific and localized relations and forms of representation. In sum, an experiential and empirical treatment of history is brought back to the present through different records – documents, life histories, costumes and tales – that give an account of situated social practices in a temporal frame. Materiality and local historicity gives us a contemporary reading of historical processes which are meaningful for actors, in opposition to accounts of scholars having privileged bird-eye views, many times intended for self-imposed ideological endeavors.

Perhaps the most recurrent criticism is that the empirical focus on social action of the AOA is loaded with methodological individualism, an epistemological standpoint by which large scale social phenomena are explained through the dispositions and beliefs of individuals. Knorr-Cetina defines it as follows:

> *Methodological individualism demands that all of the concepts used in social theory be analyzable in terms of the interests, activities, etc., of individual human beings, since ultimately only individuals are responsible, purposive human actors* (Knorr-Cetina 1981: 8).

However, the practitioners of the AOA do not study individuals, but actors' interactions in given social situations, therefore, they shall be better identified by what Knorr-Cetina terms as *methodological situationalism*, which proceeds from 'interactionism' in contrast to individualism:

> *[Interactionism] followed by the fact that social conduct displays itself as contingent upon the conduct of others. Hence, while it might be correct that only individuals are intentional actors, social action arises from the interlocking of intentionalities rather than from their singular existence (Knorr-Cetina 1981: 9)…Methodological situationalism has replaced the model of the individual actor as the ultimate unit of social conduct by a conception which incorporates the reciprocity and the situated character of social action* (ibid. 1981: 15).

The criticism of methodological individualism overlooks the permanent concern that AOA practitioners have for the collective representation of the social through the study of social situations. Indeed, the methodological units or more properly *the site of the social* of the AOA researches correspond to different formulations of the collective constitution of a situated reality, not in terms of the sum of individuals, but of enduring organizing processes and structuring actions. For example, the concepts of *knowledge interfaces* (Long 1989), *force fields* (Nuijten 1998), *middle ground* (Arce 2003a), and even the works that introduce actor-network theory to the study of development (Verschoor 1997; Steins 1999), are worked out in case studies that focus on the situated and distributed interactions of many actors.

In my opinion, after reviewing some of the critiques to the AOA, there is one aspect that needs further elucidation. That is, the extent to which the learning of constructivism has not been systematically incorporated to the self-reflexive practice of knowledge production. By this, I mean acknowledging that the construction of an epistemic community is based on social practices related to a specific group and in a particular juncture. Throughout this chapter I have applied the deconstructive approach that made known the AOA to study this academic group itself. My argument is that we do not need to deconstruct in order to clear up or legitimate how a certain body of knowledge is being constructed, but that the strength of an actor-oriented sociology comes from the shared experiential construction of those multiple realities it aims to account for. That is, researchers that have based their narratives on the lived experience with other people as the source of an engaged account of social life as opposed to scholarly practices that erase the researchers presence and still sustain a mandate from society to become its spokesperson. Perhaps we tend to forget this lesson due to the double movement that continually leads us back to Cartesian practices: separating the fieldwork experience or any empirical source of knowledge from the interpretative analysis of a seemingly independent reality which is reconstructed later by the exercise of inductive inference. In science, as in many aspects of social life, *the collective* is also represented through the active engagement of researchers with the world and the capacity of better, but always situated, ways of living and imagining other possible worlds. As I see it, the weakness that an actor-oriented approach might face is not the representation of the collective, but of compromising the fundaments of its epistemological strength. The *collective* representation of *the social* has a certain shape or acquires meaning also through the *active work of the researchers* and their joint engagement with scientific practices.

This brief review aims to present some of the main features of the constitution of an epistemic community, the practices that give them continuity and the elements that, over time, have led to a progressive differentiation. The current research is embedded in these practices and inspired in its working methods through a slow process of discovery and adscription. Needless to say that it did not occur on the basis of theoretical orthodoxy, given that it has identified the historical contingency by which AOA practitioners are constructing new research agendas and hybridizing their conceptual frameworks, but overall, because of the personal interest and background of this researcher. Extending fieldwork to the development sociology group, where a great deal of this research was crafted, allows me to fill the void of collective scientific practices and to situate the results as part of a process that is interwoven with the search for

training and recognition. Next, I will narrate how the research project was built as a first step for this process of internal legitimacy.

Building a Research Project

For junior scholars the objects of research are a composite made of idiosyncratic thematic interest, background experience in practices of scientific research and the larger research agendas of the scholarly communities one seeks to be a part of. In my case, the research theme of this book came after a gradual process of systematic observations and a number of contingent encounters that caught my attention and led to engagement in a long term investigation. The first step was the fruit of one of the previous research projects I was involved in, on the emerging importance of the salmon farming industry and its effects on the peasant economy in the Region of Los Lagos in southern Chile, a work that was printed in a peer review paper of a Chilean journal of social sciences (Blanco and Amtmann 2001). It was probably the work done to write this paper that made me aware of the relevance of keeping track of the dynamic but conflictive expansion of salmon farming in the southernmost region of Chile. In 2000, salmon farming was described as a technology intensive industry of heavy impact on Chilean exports that triggered an accelerated process of social reorganization in previously economically depressed areas, whose newest 'production frontier' was the archipelago of Las Guaitecas in the Patagonian Region of Aysén. Until that project, the general pattern of my interest dealt with the intersection between food industries and the rural development of areas largely dominated by peasant livelihoods. Of particular interest was to situate those globally functional food trade networks within the debate on the so called Latin American New Rurality (Giarraca 2001; Kay 2001; Blanco and Amtmann 2002; Gómez 2002; Grammont de 2004; Pérez et al. 2008).

The wide range of issues exposed in this first paper and the possibilities of extending the research to Aysén were also central arguments during the preliminary talks with my PhD supervisor and became an accepted theme to be problematised and converted into a full research proposal. Although there might be other schemes of PhD training, the *proposal* or *research project*[6] in this case is the formal procedure of testing the candidate's capacity to plot scientific research before setting out to do fieldwork. Retrospectively, the early period of doing a preliminary proposal was a time for persuasion, not only about specifying the social relevance of doing research on salmon farming and convincing the senior staff of its feasibility, but on how this theme could intersect with the long term agenda of a development sociology department. So, as much time was spent on elucidating how to approach the effects of salmon farming among the Patagonian people as in getting to know the staff who worked in the development sociology group.

The task of getting to know the production and working methods of the heterogeneous group of people that inhabit the corridor of the development

sociology group (RDS) at Wageningen is something that only can be accomplished in relational terms. That is, establishing the intellectual heritage, theoretical affinities, scholarly connections, use of sources and the empirical work of its staff, all aspects that only can be studied by reading, talking and listening. Indeed, one of the most demanding tasks during the writing of the research proposal was reading, in particular the work produced by those with whom I closely collaborated and the literature recommended by the senior staff. Although social sciences always demand the command of particular conceptual knowledge, entering an epistemic community entailed a deep understanding of a new and quite specific 'working language', something that is gradually internalized through different means: reading, lectures, seminars and talks with fellow junior or senior researchers. The adjustment or tuning of this conceptual 'tool box' to ones own language is progressively undertaken through the daily activities of the group and often implied resistance, debate and doubt when confronted with a previous scientific background. However, at the time of translating the dive-into-theory to the writing of the research proposal, many efforts were made to ground this new language in the thematic aspects of the research, a task that many times resulted in forcing a still unknown fieldwork situation to theoretical approaches.

Nevertheless, in the particular case of the Wageningen group of development sociology, it is the focus on methodology that makes the difference between the plain exercise of writing a proposal and the subsequent research steps. From the beginning, they emphasize the importance of fieldwork and the ethnographic approach to social issues, so as not to take for granted any research condition before situating it from the actors' perspective. This call for embracing ethnography is crucial, because at a certain point one assumed that many aspects of a research proposal would change radically after the field experience. Thus, perhaps the most enduring formative aspect during this period is to come to grips with the meaning and practices that guide ethnography. Ethnography for the study of social change is a trademark of the Rural Development Sociology group at Wageningen, but has its roots in the type of social anthropology practiced by scholars of the Manchester School since the ground breaking work of Max Gluckman. Indeed, for me, one of the most influential works for understanding how ethnography is translated into a situational analysis was reading the *Analysis of a Social Situation in Modern Zululand*. First published in 1940, this paper is a detailed description of the inauguration ceremony of a bridge in South Africa, which became not only a strong critique to the simplistic views of colonial segregation, but also introduced the study of social situations as a particular form of case study (Gluckman 1958).

Despite reading this enlightening work and many others produced by contemporary fellow researchers, a comprehensive understanding of ethnography without practicing it is simply not possible, but at least one becomes familiar with certain writing styles that portray social situations and livelihoods in a rich, descriptive fashion. A parallel and lively source of information came from junior researchers who had recently returned to the

development sociology group after doing fieldwork. They shared stories, anecdotes, and experiences from the field that anticipated many of the concerns that a new ethnographer might have. These conversations occurred not only within academic facilities, but were extended to various settings within student life.

Imagining and projecting the research was also a time for hesitation about the adequacy of situating it in Aysén, a region I had never visited before, since most of my work had been located in the neighboring Region of Los Lagos. The main justification for this aim was the opportunity to witness a rather new phase in the development of Chilean fish farming. According to many experts, an expansion was in progress and companies had to set up economic units and organize labor facing challenges that were rather different than those faced at the beginning. The scenario seemed to be rather complex, companies had to adapt the production systems to the geographic and infrastructure particularities of Aysén. This change meant new technological demands to meet, new ways of organizing labor, and new patterns in their relation to settlers and other well organized local actors. Given that I was already living in the Netherlands, the task of gathering information on the region was not easy and made me underestimate many issues, but, after a preliminary investigation during the writing of the research proposal, my enthusiasm and determination about doing research in Patagonia increased.

Other related aspects that any research project tries to anticipate, but always tends to underestimate, are the timing and resources needed for extended fieldwork. During the writing of the proposal one internalizes that ethnography requires spending considerable time in the field and that resources for mobility and living expenses are relevant issues. On the maps, the Patagonian Region of Aysén looks like a fragmented territory made of countless islands, a number of fjords and a handful of small cities spread within a rugged geography (see Map 1). After investigating the means of transport, routes, distances and facilities it is clear that Aysén is a territory where the newcomer cannot improvise. Terrestrial routes do not have regular services of public transport and in several areas depend on roll-on roll-off ferries. The main towns are distanced by hundreds of kilometers with few small settlements in between. The most common way of getting around is through maritime transport, however, boat schedules are highly dependent on the changing weather conditions. Flights are regular, but they only land at the one regional airport – Balmaceda – which is located near the border with Argentina, several hours away from the coastal towns, where the main activities related to fish farming occur.

Salmon farming in Aysén is a relatively new activity, so there was still restricted information about the sites where many relevant developments were taking place. The public aspect of this expansion was known through corporate propaganda and press reports that welcomed the presence of salmon farming companies in the region in a very vague style. Very few of the media presented a deeper view about some of the conflicts arising from this expansion and gave a voice to groups that opposed fish farming in

Patagonia. In this scenario of unreliable sources and compelled by the need of determining in advance some of the field sites for my research proposal, I sought the advice of some acquaintances working within the industry to identify the areas that were showing increasing fish farming activity. In this way, I identified four emergent areas of production, from north to south: Melinka, Puyuhuapi, Puerto Cisnes and Puerto Aysén. All of them were targeted as possible fieldwork sites in the research proposal, but the final decision remained open, pending preliminary visits.

In addition, some events that unfold during the definition of the research sites shows that localization has more complexities to be taken into account. During the writing of the research proposal I attended a conference in Trondheim, Norway. It just so happened that among the fieldtrips that the conference offered, there was one to the Trøndelag Fjord related to salmon farming, that I, of course, decided to join (see Map 3 in Annex 3). During the visit I reaffirmed the conviction that a large part of the processes that were influencing the regional growth of salmon farming, occurred in multiple sites out of Patagonia and made me propose a multi-sited research. What looks simple and innovative on paper, over time turned into a complex process of calculation for projecting costs, time-framing and institutional contacts to ground the possibilities of a multi-sited fieldwork. Thus, the scientific project gave pace to frantic logistic activity of planning that entailed the search for funding, means and contacts[7].

The final result of a process that took six months was a thirty page proposal and public presentation to the senior and junior staff right before catching a flight to begin my fieldwork in Patagonia in September 2004. On that opportunity, I received valuable comments and had to justify some of my arguments, only to realize that the whole process of the research proposal was an exercise to probe my hypothetic research capacities. But, from the long term research perspective, the importance of the proposal is not the result, but the effects the process has in the subsequent steps. What remained important in this process, was that the focus on the conflictive side of salmon farming and the methodological strategy to follow the commodity through the relevant points of the food network, drifted to aspects more centered on the social construction of the Patagonian region.

In sum, a research proposal is not only paper work, but a time of transition for situating the researcher's interest within the larger expectations of a community of scientific practices and translating this into text. In most universities it is part of the regular procedure that entitles doctoral candidates to go on with their research project, but also a tentative approach to harmonize a new language, theoretical perspectives and methodologies in order to anticipate certain aspects of an envisioned fieldwork. The writing of a research proposal, in this particular case, was the first step within a larger process, that not only helped to shape the research object, but particularly the researcher's encounter with the scientific practices of an epistemic community. A second step was the unique experience of fieldwork in Aysén, that is the encounter with people, settings and practices that made me ground some of my assumptions, abandon others and which became the empirical source for the writing of this text.

At the encounter of the social:
A post-fieldwork reading of methodology

From the outset, the architecture of this book is ambitious insofar as it aims to integrate a number of theoretical and methodological issues as integral parts of rather than as separate traits of research analysis, but imbricate with the case studies and ethnographic material presented throughout the chapters. In this sense, the whole book must be read as an effect, an assemblage of the methodological work in which the fieldwork experience was decisive and transformative.

In order to anticipate how the main research findings relate to methodological concerns, this section presents the bottom line of four propositions that will unfold gradually and empirically during the subsequent reading of the chapters. These propositions are the result of some of the idiosyncratic aspects described at the beginning of the chapter, something usually presented as a requisite for originality of authorship demanded from new research, but they also express a collective outcome insofar as they are inscribed in the practices and perspectives of the larger research group in which this investigation developed. Some of these propositions will come up more persistently and are analytically separated from the research objects, whereas others are undifferentiated from the relations they attempt to present. This is because these propositions tell us how methodology has helped to enact or at least to establish the partial connections that render research objects visible. As stated by John Law:

> *[M]ethods, their rules, and even more methods' practices, not only describe but also help to* ***produce*** *the reality that they understand* (in bold author' emphasis, Law 2004: 5).

The fieldwork encounters transformed my perception about the social life in Patagonia as much as the assemblage methods of this book transformed those realities into textual interpretations whose plausibility is now being judged by the readers. The following propositions are attempts to make some of my transformative research approach explicit.

Four methodological propositions and their theoretical consequences

The first proposition, aims to clarify the reasons why this book embraces the theoretical challenge of exploring a number of possible crossbreeding between two fields of social sciences: an actor-oriented Sociology/Anthropology of Development and the Science and Technology Studies (hereinafter STS). The second proposition demands a systematic reflection about the processes and conditions that make knowing possible at every stage of research. The third proposition explores the promises and limits of multi-site ethnography. Finally, the fourth proposition specifies why I turned the region into a social field that facilitates, on one hand, the phenomenological experience of a geographical territory and, on the other hand, the analytical display of collective organizing practices and dissociating controversies.

First Proposition:
At the crossroads of STS and Development Studies

This book, from beginning to end, must be read as a careful attempt to understand the coming into being of objects of intervention. However, the research journey triggered a reflexive process over the adequacy of choosing either a single set of conceptual tools or embracing a certain degree of eclecticism among those bodies of knowledge that could help to tackle both the evident and the subjacent research difficulties. In the current case, those difficulties relate to the selection of means to depict the complex composition of socio-technical networks that support a multilayered object - the region- while, at the same time, revealing the way by which an industrial cluster – salmon farming – defies the traditional forms of territorial interventions in the Chilean Patagonia. To accomplish this rather puzzling aim, I looked at the many contact zones of two fields which certainly converge in the study of socio-technical change: an actor–oriented Sociology/Anthropology of Development and Science and Technology Studies.

The questions that immediately arise are: Are there any common standpoints? What are the methodological options they offer for following the way actors assemble the world? Is this theoretical cross-fertilization of any value? Or perhaps, phrased in a single question: what can we gain from gazing upon both sources? They have a common interest in 'socio-technical change', and therefore, any intellectual effort in order to integrate them might well pay off, and, indeed, some works have already explored this direction (Verschoor 1997; Steins 1999). Undeniably, STS and AOA share a constructivist approach and thematic concerns that intersect in a number of theoretical and methodological issues. But, we should not see this attempt as a blind embracing of eclecticism that dilutes the history, methods, and research interest of different groups of scholars. Instead, the outcome shall be found at the crossroads of both perspectives: where concrete situations of social development which are more tightly related to the idea of technical change, must necessarily begin with a systematic reflection on the role of researchers in fixing a certain reality and not taking it simply a given. It is at these points that a common ground can be found.

Let me first give a brief review about the group of studies labeled as STS. To start with, John Law offers us a short definition:

> *STS is the study of science and technology in a social context. The basic intuition is simple: it is that scientific knowledge and technologies do not evolve in a vacuum. Rather they participate in the social world, being shaped by it, and simultaneously shaping it* (Law 2004: 12).

STS evolved during the 1980s, when many seminal works slowly built a field that challenged the way science and technology were understood8 (Latour and Woolgar 1979; MacKenzie and Wajcman 1985 [1999]; Callon 1986; Hughes 1986; Law 1986; Bijker et al. 1987; Bijker and Law 1992). They are not a single group, but share an understanding of technology as a socially constructed process and have moved away, through empirical work, from any kind of technological determinism. However, over time, these researchers also began to differ greatly over the methodological treatment of social constructivism.

Roughly, they can be grouped in at least three branches. There is the Systemic Approach associated to the historian Thomas Hughes (1986); the Social Construction of Technology (SCOT) by Bijker and Pinch (1987); and, finally, the Actor-Network Theory (ANT) associated mainly with the works of Bruno Latour, Michel Callon, and John Law9. Correspondingly, they have pooled resources of different interests to critically engaged social sciences in the study of technology.

In order to limit the length of this proposition, I will give a brief outline from each perspective only focusing on what I regard as the most interesting metaphors that may enrich the study of development situations and, in particular, the reading of this book.

Hughes, who has been mainly interested in the development of large technological systems from an historical perspective, coined the concept of *seamless web* to stress the interwoven constitution of a set of technologies, more than a single device or artifact, in which the political, social and economic aspects cannot be empirically separated from each other (Hughes 1986).

The SCOT perspective has made of the *black-box* metaphor a trademark of their research enquiries (Bijker et al. 1987). This metaphor has become a methodological device referring to all processes in science and technology that are described solely in terms of determinants and results omitting the interpretative and flexible moments that the processes of technology development have. The SCOT research strategy began by opening the black-boxes in order to understand the processes of construction and the mechanisms of stabilization or 'closure' of certain technologies. A variation of this constructivist approach is the *Social Shaping of Technology* by MacKenzie and Wajcman (1985 [1999]). Although the latter approach has been criticized for being more socially determinist, it is perhaps interesting due to the way it focuses on both, heterogeneous forces shaping technology and the power of unintended consequences in creating further avenues of development.

Perhaps the Actor-Network Theory is the most radical perspective, as well as the most criticized, given that it proposes a symmetric treatment of those human and non-human interactions that have an effect in the assembling of social situations (Callon 1986). Under this perspective, the human actor is replaced by the concept of *actant* to stress the symmetric treatment of the actions performed by non-human entities. The hyphenated *actor-network* metaphor explicitly emphasizes that the situations that compose the world are made by a distributed agency of many actants whose interventions do make a difference and are empirically traceable (Latour 2005).

But, what is the contribution of all these approaches if we turn the methodological priority of STS scholars upside down? What would be the result if we focus on a particular group of actors instead of following a particular technology? And, pushing the argument closer to the themes of development studies, how does 'the technical' operate during processes of social interventions? It seems that the last question has been largely underestimated, perhaps because the natural focus of research of STS, its objects of enquiry, are artifacts or technological systems and therefore other sources of change are somehow neglected or at least empirically downplayed. For this reason, it is the focus and not the tools, that justify exploring some of the applications of the STS perspectives in an actor-oriented sociology/anthropology of development and vice versa.

In sum, if we understand a given technology or set of technologies, such as salmon farming, as a particular type of intervention, particularly when they lead to a spatial re-organization of production, it follows that the type of tools required for its description and analysis might be adequate to the challenge of multi-layered objects of research. The common lesson from both, an actor-oriented sociology and the studies of science and technology, is that any industrial technological development can be traced back to how it has been composed by its actors and therefore, its trajectory can be re-interpreted as creative and open-ended responses to changes as will be seen in Chapter 6 and 7.

Second Proposition:
Methodology-epistemology

In the social sciences methodology has been progressively reduced to systematically specify the strategies, tools and means of the information gathering process in a certain field of research. This process of specification, or rather the objectification of methodology, in the practices of science, has become compulsory during the stages of research planning, that is, before the fieldwork experience. For this reason, we tend to lose ground with the conditions that make our knowledge possible in concrete situations, and hence, it does not seem strange at all that methodology becomes more and more associated to a set of techniques and procedures that produce information. Norbert Elias, in the early 1980s already affirmed:

> *The level of detachment represented by the scientist' work has become more or less institutionalized as part of a scientific tradition reproduced by means of a highly specialized training, maintained by various forms of social control and socially induced emotional restraints; it has become embodied in the conceptual tools, the basic assumptions, the methods of speaking and thinking we scientists use* (Elias 1983 [1987]: 6).

Elias was probably right when he identified detachment as the emotional attitude that has led natural science to gain control and manipulate natural forces by imposing upon themselves greater restraints in their approaches to natural phenomena, but was most likely wrong when he asserted that this process has implied greater security for humankind, as it was widely proven by the 'Risk Society' of Ulrich Beck (1992) and many of the current concerns about climate change. Elias' claim, made in the early 1980s, was that social science should advance to a better balance between involvement and detachment and might do so by shifting towards the latter. Taking Elias' proposition regarding the continuum engagement-detachment a step further, I argue that sociological knowledge should move more and more towards engaged accounts of multiple realities, the heterogeneity of social life and the multiplicity of practices within practices. My contention, that I will attempt to lay down throughout the chapters of this book, is that there is an opportunity for social sciences to advocate for a type of thinking and writing which gives up the will of control and prediction, but becomes a space for reflexivity and the expression of diversity. In other words a tool committed to the democratization of experience (Reed 1996).

This proposition outlines the basis of my interest expressed through the whole book, which is that science - irrespective of its division of labor into natural or social - should gain in efficacy and transparency if tackling research activities through practices that do

not separate methodology from its epistemological basis. In order to emphasize the effects of the intertwinement of these concepts during the research process, I will hyphenate them hereinafter as methodology-epistemology. Thinking of them as coupled concepts reflects on the practice of sciences as being a combination of method and awareness about the implications of detection of information or, in other words, *a deliberate awareness of the world.* Methodology-epistemology may be understood as the combination of chosen methods to search for something that caught our attention and awareness of the relational effects that we, researchers, created through this exploratory activity and its subsequent representation in scientific terms.

Researchers should engage with the world through experience and constantly fight against the tendency to drift - or being led - into the widely extended Cartesian practices of science. That is, creating methods of research that set the experience of the researcher apart from the object of study. We scientists, have become concept-makers, but our activity requires a constant reminder of the empirical basis that legitimates the fabrication of concepts. Otherwise, concepts become sophisticated recipients emptied of content. Methodology-epistemology here refers to the instant process of experiential encounter during the research vis-à-vis the selection or adaptation of appropriate techniques, methods, recording instruments and analytical skills to order and interpret such events. This is a trial and error process in which many times we fail to choose the appropriate way *to grasp* something we have experienced despite the fact that we never failed *to experience* it. As expressed by Charles Taylor:

> *We can draw a neat line between my* ***picture*** *of an object and that object, but not between my* ***dealing*** *with the object and that object. It may make sense to ask us to focus on what we* ***believe*** *about something, say a football, even in the absence of that thing; but when it comes to* ***playing*** *football, the corresponding suggestion would be absurd. The actions involved in the game can't be done without the object; they include the object* (in bold original emphasis, Taylor 1995: 12).

As exemplified by Taylor, we first get to know all things through the way we deal with them as agents in our everyday world without any mediation. In my case, the practice of writing ethnographic records has been part and parcel of the research experience. Therefore, this proposition suggests that we should abandon conceptions that treat the experience of fieldwork and the practice of writing as two different epistemological moments in the activity of research. As Dreyfus, commenting on Taylor, states;

> *He [Taylor] shows that a description of our direct involvement with things is a convincing phenomenological answer to the dogmatic claim that the mind's relation to the world must be mediated by beliefs caused by things in the world. Perception provides reliable pre-propositional bases for action and for accepting beliefs* (Dreyfus 2004: 56).

This view refuses to accept any inner/outer Cartesian distinction, stressing that we make up the world through the bodily skills that allow us to get in contact with it. Taylor, called this philosophical endeavor of reversing the Cartesian dichotomy the 'overcoming of epistemology' (Taylor 1995) and Dreyfus presents it as Taylor anti-epistemology (Dreyfus 2004: 52). However, I do not see it as a denial of the possibility of positioning

our way of knowing, but as undermining all attempts of disengaged subjects, adopting a position of someone who knows, with a viewpoint that comes from nowhere:

> *Even in our theoretical stance to the world, we are agents. Even to find out about the world and formulate disinterested pictures, we have to come to grips with it, experiment, set ourselves to observe, control conditions. But in all this, which forms the indispensable basis of theory, we are engaged as agents coping with things* (Taylor 1995: 11)

The research awareness of being engaged agents coping with the world is something naturally exacerbated during fieldwork periods. The fieldwork experience demands a flexible management of contingency as a key element to balance the researcher' s intentions with the fluidity of social encounters. *Intention, encounter* and *intuition* must be combined with the events that constitute the process of immersion of the researcher into other geographies and climates, facing unknown people and places, getting use to new languages and codes, etc. In this sense, the analysis of the observed and even the process of recording, remains momentarily in the background, at least during the intense period of adaptation, that for the researcher, implies a maximization of the experience of understanding, sharing, participating in their practices and in the best of cases, to gain a sense of belonging. The advantage of this anthropological commitment is that categorizations and abstractions are made *a posteriori* which help us to remain faithful, at least in principle, to the nominalism displayed by the proper actors and, in this manner, to study the significance of things in the context of their practices (Schatzki 2003). This stance also offers us a period of time in which to develop a minimum degree of sociability and intelligibility to ground the interpretation of social situations (Schatzki 1996).

In sum, if we understand epistemology as an acute awareness of our engagement with the world, then methodology is the specification of the means and conditions in the process of knowledge production.

Third Proposition:
Mapping out the promises of multi-sited ethnography

A first paradoxical conclusion after extensive fieldwork in southern Chile and shorter periods of research carried out in Norway, Belgium and the Netherlands is that nothing is more transnational than a researcher in permanent motion; traveling to and around different places and social contexts, using different means of transport, experiencing displacement and trying to make sense of it while coping with the physical and emotional effects of a self-imposed research pilgrimage. It seems then that a first aspect to be problematised is the changing references provoked by this motion (Hannerz 1996). This forced adaptation of going through different contexts is the researcher's first hand experience of alternating local and global frames of interpretation.

Additionally, the study of development and process of social change entails an extra difficulty to demarcate the extent and limits of framing change - the most fluid state of social affairs - from a moving subject, namely the trans-local researcher. It is followed by the question: How can we give an account of the flux of social change within fixed frames of interpretations? The following chapters are attempts to answer this question

in a more comprehensive way, but, to this particular proposition, I have a theme (the expansion of salmon farming), an object of enquiry (how this expansion relates to regional development), and a research strategy of tracing the many relevant actors and processes occurring in multiple locations. These have led me to make the methodological choice of a multi-sited ethnography. But, what does a research strategy based on following multiple sites of interactions mean?

In his influential article (1995): "Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography" George Marcus discussed the emergence of a type of anthropological work, that he labeled *multi-sited ethnography*. In his words:

> *[It] moves out from a single site and local situations of conventional ethnographic research designs to examine the circulation of cultural meanings, objects, and identities in diffuse time-space. This mode defines for itself an object of study that cannot be accounted for ethnographically by remaining focused in a single site of intensive investigation* (Marcus 1995: 96).

His argument, that has been widely spread, was based on a sharp observation of a methodological trend. However, it also ignited a debate about its plausibility. There have been many authors since that have discussed the advantages and disadvantages of multi-sited ethnography, acknowledging a shift in the focus and treatment of trans-local research. On the basis of Marcus' observation, many authors have formulated different variations for answering the same query: How to research certain phenomena that seem to be connected through multiple sites of interactions? Following the answer of this question we can find the proliferation of names for barely the same multi-sited strategy, such as the *global ethnography* (Burawoy 2000), the *globography* (Hendry 2003), and the *'single geographically discontinuous site'* (Hage 2005). The AOA practitioners have also taken on board the multi-site ethnography in some of their research as a way of making sense of global/local processes, an interest they sustain to understand the way people re-position the multiple manifestations of modernity (Arce and Long 2000; Tamagno 2003). In this line of thought, Arce and Long defended an ethnographic tradition applied to development:

> *[Ethnography] must be multi-vocal (Grillo & Stirrat, 1997), multi-sited (Marcus, 1995), but also increasingly concerned with people's countertendencies to modernity* (Arce and Long 2000: 26).

Nevertheless, a reasonable critique aimed to the multi-sited perspective is about whether it is possible to maintain the depth of detailed ethnography, when not enough qualitative time is spent in one single site so as to enter into the lifeworlds of actors. This concern is highly pertinent, in particular given the long process by which anthropologists have legitimized ethnography as a valid source of knowledge. I would suggest that we can overcome the fears of superficiality if we emphasize that the *practice* of the multi-sited ethnography is, indeed, the *fieldwork* as *the source of the researcher's lived experience* and his/her ability to situate facts or detailed information coming from a variety of sources - such as, interviews, media data, corporate information and statistics - during a research process of moving subjects and changing frameworks. Perhaps for those working on transnational issues it is time to stop speaking of multi-sited

ethnography – the whole process of recording and the construction of textual interpretations - and change to the more modest, but equally important *multi-sited fieldwork* – the source of the researcher's experience. What could this nominal change bring forward? In the first place, it is relevant in order to recognize that a certain type of fieldwork will not have the minimum presence needed to convert the researcher's experience into detailed or thick ethnography. Yet at the core of anthropological fieldwork, what remains, is the researchers lived experience and his/her commitment of 'being there' and trying to make sense of partial connections from complex situations and moving subjects. The quality of ethnographical work is not granted by being either multi-sited, nor for being based on an in-depth conventional single site. It will depend on a clear specification about what the researcher wants to come to terms with, on whether this interpretation is based on and closer to people' quotidian experiences and the final valuation of both aspects given by the readers.

It seems that the challenge of multi-sited fieldwork is to maintain a certain capacity for making sense of usually fragmentary information coming from changing contexts. This capacity, though, is not given by a modern stance towards the study of social affairs in a global context, but it is still dependent on the skills developed through the embodied and embedded practice of ethnography. The difference with single-sited ethnographies is a thematic interest of researching aspects that demand an experience of the translation, the displacement and the properties of objects and meanings *in* motion.

Although by now the impossibility of separating one particular set of information and its interpretation from the whole research experience should be clear, I will proceed to specify what the sources and stages of the fieldwork were. Accordingly, the resulting interpretation presented in this book is the partial result of a combination of twelve months of fieldwork, carried out in the south of Chile, two short stays in Norway and interviews conducted in The Netherlands and Brussels. The fieldwork in Chile was split into two periods of 8 and 4 months, the former starting from October 2004 up to May 2005, and the latter from December 2005 until March 2006. The town that hosted me during great part of the research was Puerto Cisnes in the Region of Aysén, but also involved periodic displacements in a larger research area that included many fish farms in the Archipelago of Las Guaitecas and the main salmon farming facilities in the Regions of Los Lagos and Aysén. In this extended area, I visited the main coastal settlements located between Puerto Montt and Puerto Chacabuco, which included the towns of Quellón, Melinka, Puerto Gala, Puyuhapi and Puerto Aysén (see Map 2 in Chapter One).

In Norway the fieldwork was shorter and based on two stays in the city of Trondheim, located in the Trøndelag, the central region of the country. They consisted in a one week visit during July 2004 and one month stay in September 2005[10]. During the stays, I did fieldtrips to the islands of Hitra and Frøya on the west coast of Sør-Trøndelag (see Map 3 in Annex 3), where I could observe the facilities and activities of the whole salmon farming process in companies of different sizes. These fieldtrips included visits to one hatchery, two fish farms and one processing plant. Additionally, I interviewed six fish farming experts in Trondheim and two in the city of Bergen. The interviewees were entrepreneurs, representatives of the Fish Farming Association (FHL), researchers (from the University of Trondheim, SINTEF and SINF[11]) and the regional chief of the fisheries and aquaculture regulatory agency in Bergen (Fiskeri Directorat).

The research paths also led me to a series of interviews in Brussels, Belgium, inquiring after a case that involves an international trade controversy that affects Chilean salmon farming and will be reviewed in Chapter Eight.

Finally, this Chapter owes inspiration to the 'fieldwork' done in the rural development sociology group in Wageningen University, the Netherlands. Of particular importance in the reconstruction of certain historical aspects of this group were the interviews conducted with Professor Norman Long and Professor Jan Douwe van der Ploeg.

Therefore, I do think it is worthwhile to insist upon a multi-sited approach in certain situations that are more dependent on global/local interactions, but also to make the distinction between sources of lived experience - fieldwork encounters - and the detailed interpretative accounts that result from it - ethnography. This rhetoric and conceptual distinction could contribute to reducing the tensions provoked by the concerns of anthropologists in maintaining ethnography as a cherished source of profound knowledge, by stressing beforehand that not all results of multi-sited fieldwork rely on the thick description of conventional ethnography.

Fourth Proposition:
The Region as social field

As indicated throughout this chapter, the definition of the research setting and the construction of the research object were composed by both elements of contingency and personal choice, but they were also strongly influenced by the process of encounter of an epistemic community and the subscription to their main methodological standpoints. Later, the conceptual entry points and the research object in itself drifted to certain aspects not considered in the original research proposal, following pathways encounter at the field and the ethnographic records. Retrospectively, the initial focus of research was the study of the changes and the social reorganization triggered by the expansion of the salmon farming industry to the Patagonian Region of Aysén. Therefore, in the research proposal the object was the conjunction of social relations constitutive of this industry in a specific research area; the research strategy was to follow the production and circulation of salmon, its main commodity, through other relevant settings of interactions, and; the critical perspective that helped problematize the case, would be guaranteed through the proper identification and study of conflicts by 'jumping' from the salmon farming industry to those actors and groups of interest having different views about the development of the region.

During the ethnographic journey I faced a critical methodological and conceptual difficulty. The *social* of salmon farming in Patagonia could neither be reduced to the relations within the industry, nor to the following of the production chain from local to global. Neither the mapping of other key actors organized around the industry or in opposition to it would guarantee a panoramic and comprehensive view. The multidimensional elements that explain salmon farming's success as a productive system, as well as a source of controversy with other interest groups, requires a methodological strategy that could display these complexities in a broader social field, or to be more precise, to identify the mechanisms of articulation and conflicts of various social fields. It is at this early interpretative stage after fieldwork, where the concept of

social field shows a clear methodological importance for ordering the experience in a sociological language.

The concept of social field has a long genealogy which can be traced back to the Manchester School of Anthropology in its early opposition to functionalist views. Most authors within this research tradition understand social fields as a process-oriented perspective in which shared norms, rules and values that frame action are not fixed, but are subject to manipulation and negotiation (Nuijten 1998: 17). Long offers the following definition:

> *the idea of the field of activity is much wider than what we normally mean by an economic or political structure for it refers not only to those institutional arrangements specifically designed to attain certain economic and political ends, but also takes into account of other kinds of relationships and values that may be utilised by the same purpose* (Long 1968: 9 quoted by Long 2001: 58)

Long understand social fields not only in term of processes that generate norms and binding rules but as a social space united in the intelligibility given by the performance of particular types of actions. In short a social field can be understood as *an area of social life defined in relation to certain types of action* (Long 1968:9 quoted by Nuijten 1998: 17). This perspective avoid a conceptualization that reduces a field of action to the normative and value laden aspects of social life and, instead, extends the understanding to the way people construct meaningful life projects beyond the normative and institutional spheres.

Another key to the conceptualization of the social field is given by the French sociologist Pierre Bourdieu. For him, to think in terms of fields is to think relationally. He neglected scholarly definitions and instead tells us that social fields can only be understood in analytical terms:

> *[A]s a network or configuration of objective relations between positions. These positions are objectively defined, in its existence and the determination exerted over its occupants, agents or institutions, for its present and potential situation in the structure of distribution of elements of power (or capital) whose possession organizes the access to the specific advantages at play within the field, as well as it objective relation with other positions (domination, subordination, homology, etc.)* (Bourdieu and Wacquant 1992 [2005]: 150).

My work, shares a common ground with the concept of *semi-autonomous social field* as formulated by the social anthropologist from Manchester Sally Falk Moore (Moore 1978). Moore, whose main work deals with the study of law and social change in the African context, proposed the semi-autonomous social field as the analytical object of study that allows us to observe the creation of rules, costumes, symbols and meaning. In analytical terms, the semi-autonomous social field offers an appropriate scale of interactions, coherence, and relative independence to others fields, but, at the same time, is vulnerable to rules, decisions and forces coming from other social fields, or in a broader sense, articulations with other spheres of social organization (Moore 1978: 55).

Later on, Arce adapted the semi-autonomous social field to the context of social policy through the metaphor of the *middle ground*[12] (Arce 2003a). Arce' middle ground is applied to the analysis of the social space where the creation and implementation of policy meets social life. In his words:

> *It can be conceptualized as a space where interfaces between administrative policies and peoples' courses of action take place, and as a location where different agents encounter one another, giving rise to interfaces between different conceptual idioms represented within a semi-autonomous field of action (for this concept see Falk Moore, 1973). These interfaces result in the emergence of mutagenic properties, and within them we can analyze how people see themselves in the world according to the knowledge they can draw on* (Arce 2003a: 847)

In this research, the social field that facilitates the analytical approach to the fieldwork experience is *the region*. The region relates to the territorial and administrative unit so familiar to many flesh and blood actors in the field and recurrently indicated in policy documents, which represents the container of institutions, activities, and resources that are often a source of disputes, due to different conceptions and practices related to territorial development. The region thus becomes a middle ground of analysis because, on the one hand, it is a point of encounter between social life, institutions, and political processes, and, on the other hand, it is composed of various semi-autonomous social fields responding to different logics, such as state agencies, development organizations, companies, settlements, groups of interests and so on. The middle ground becomes a useful methodological device, since actors relate to each other in a social and physical spaces with certain cultural features, administrative practices, symbolic mediations, norms, etc. that are intelligible to its members, because they are produced in a field of interaction whose time/space coordinates are those of proximity. The advantage of this analytical approach is that the region, as an encompassing social field, facilitates the realization of empirical work through the description of processes, relations, interactions and practices of the social actors that relate to an identifiable territorial unit. The limitation is given by the difficulties to articulate the broad set of relations with other social fields and processes in a comprehensive way which, although they exert influence and might be localized within the territorial layout of the region, are located out of the time-space scale of this research, or are beyond our possibilities of inquiry into them.

As will see in the next chapter, the region corresponds to a social and territorial unit where interpretative flexibility began with a disputed territorial layout. The region, in the Chilean context, is invented by planners as the space that approaches two domains: the community and the nation-state, the latter represented mainly by regional political-administrative institutions.

The region as place, an environment that provides a physical layout for social action, and the imagined space, that of symbolic or geographic representation, converged and became the lever for many emergent structuring properties and objects of interventions which cannot be located in micro interactions, neither do they correspond solely to abstract macro explanations. The region becomes a field of action, the so referred *middle-ground*, which turns out to be an appropriate metaphor for dissolving some of the macro - micro distinctions in analytical terms.

By now I hope to have made clear that this chapter moves beyond the normal frame of the specification of a methodology in terms of procedures and tools to approach a research object, but as a narrative that has alternated ethnographic and theoretical reflections about how this research has come into being. Every chapter is therefore related to methodology. It tells us something about the methods assembled by the researcher to reconstruct the research objects. They are heterogeneous and none of them will be found in a sort of pure state, but as a part of the situation that merits the theme of the chapter. Methods in the (social) sciences are entangled with research objects and only the reflexive process of writing allows its separation.

Notes

[1] At that time I was ascribed to the Institute of Social Sciences as a temporary lecturer, but with study leave to complete a Masters program in Roskilde University in Denmark. The Head of the Institute, Freddy Fortoul, was very supportive and influential in my definitive incorporation to the staff. He represented a decisive and influential force in the chain of events that led to this process.

[2] Within this chapter I develop the concept of epistemic community following Karin Knorr-Cetina's ideas on epistemic cultures. She refers to *epistemic cultures* as: *those amalgams of arrangements and mechanism – bonded through affinity, necessity and historical coincidence – which in a given field, make up* ***how we know what we know****. Epistemic cultures are cultures that create and warrant knowledge, and the premier knowledge institution throughout the world is, still, science* (in bold her emphasis, Knorr-Cetina 1999: 1).

[3] The subsection about the origin and progressive unfolding of the Actor-Oriented Approach combines first hand information from interviews conducted towards this aim with the emeritus Professor Norman Long and Professor Jan Douwe van der Ploeg in Wageningen and secondary sources, mainly gathered from the different books and PhD theses of the Rural Development Sociology Group from the decade of the 1990s (correspondingly quoted throughout the text) as well as documents provided by Professor Long. Informal talks with staff members enriched many aspects that did not appear in other sources.

[4] Max Gluckman directed the Rhodes-Livingstone Institute between 1941 and 1947, before becoming the first professor of social anthropology at the University of Manchester in 1949. The ethnographic practice, the situational analysis and the extended-case method were amongst the most relevant contributions to a postcolonial anthropology grouped under the label of social anthropology. More about the Manchester School can be found in a compilation book by Evens and Handelman (2006), which focuses on the impact that Mancunian social anthropology has had on many relevant contemporary scholars. For a critical review of the situational analysis and the extended case method as central contribution of Gluckman and its collaborators, see the works by Michael Burawoy (1998), Bruce Kapferer (2005) and Andreas Glaeser (2005).

[5] In the early 1990s there was a generalized disappointment in the modest results of 40 years of development policies and many voices pointed to the exhaustion of the teleological idea of progress brought forward by development institutions and industrial nations. There was also a wide concern about the role of the scholarly community working in development studies in perpetuating discourses and practices that legitimized these processes of social intervention. Most of this criticism came from a post-structuralist interpretation of development influenced by the reading of Michel Foucault and Edward Said' *Orientalism* (Ferguson 1994; Escobar 1995). The general argument was that international development institutions and practitioners were guilty of creating a post-colonial capitalist dependence within the so called Third World and that these programs in many cases destroyed local capacities and

traditional forms of understanding wellbeing. These works triggered a number of writings from different epistemic perspectives within the sociology and anthropology of development, which acknowledge a crisis of legitimacy of the object of study and proposed tentative ways out of the developmentalist paradigm (Booth 1994; Grillo 1997; Martinussen 1997; Peet and Hartwick 1999; Arce 2003a; Phillips and Ilcan 2006).

[6] A research project is the most widely used procedure for a candidate to expose his/her research design in a systematic manner before the task of data gathering or fieldwork. It is normally presented in a textual format, or as a speech presentation and is evaluated by some of the senior staff in charge. Although there are different designs, in most western countries one can find requisites equivalent to this procedure.

[7] In the financial aspect, it was of great importance to obtain a Dutch grant from the CERES Programme for Innovative PhD. Research (CEPIP) that funds fieldwork expenses. Later, I applied for a smaller grant from the Research & Development Office (DID) of the Austral University in Chile that helped complement the high research costs.

[8] The emergence of the STS perspective cannot be disengaged from previous works published in the 1960s and 1970s in the fields of history and philosophy of science. Of particular influence are the books of Thomas Kuhn, "The structure of scientific revolutions", (Kuhn 1962), and, later the Sociology of Scientific Knowledge (SSK) associated with the "Strong Programme" of the University of Edinburgh (Bloor 1976) and the York and Bath Schools (Williams and Edge 1996: 869).

[9] For an extended discussion on the differences and similarities between the three approaches listed in this account see Williams and Edge (1996), Michael (2000), and Fuglsang (2001). For economizing much of the criticism that has already pointed out important shortcomings and pitfalls of these various approaches I would suggest reading Langdon Winner (Winner 1993), Ian Hacking (Hacking 2000), and Mark Elam (Elam 1999).

[10] In the city of Trondheim I was visiting researcher at the Norsk Bygdeforskning (Norwegian Center for Rural Research) of the Norwegian University of Technology.

[11] SINTEF is the largest independent research organization in Scandinavia and has a Fisheries and Aquaculture division among twelve other research units. SINTEF headquarters are located in the city of Trondheim. SINF is the Center for Fisheries Economics and is based in the city of Bergen.

[12] The metaphor of a *middle ground* shall be seen as a theoretical attempt to bridge the gap between micro-interactions and enduring collective processes (Arce 2003a). The novelty is that it explicitly emphasizes the need for overcoming the micro-macro dichotomies in the investigation of processes centered on social policy. The concept-metaphor of the middle ground creates an interpretative space where the interaction between everyday practices and policymaking generates unexpected outcomes which have the potential to change regional, national and even international patterns.

3

The City of the Caesars

> *Places do not have locations but histories. Bound together by the itineraries of their inhabitants, places exist not in space but as nodes in a matrix of movement. I shall call this matrix "a region"* (Tim Ingold 2000: 219).

Regions change over time. They are in state of flux because they constitute social objects. Eventually, these changes in regions are the effect of cataclysmic events that could drastically transform the invariants of the territorial layout, something that might be exceptional but not impossible during a human life span. More often though, these changes are due to emergent properties of the region's social organization as a geographic entity, that is the case in certain situations of expansionism, colonialism, war, the rise or decline of influential cities, the booming of economic activities, administrative reforms, constructions of roads. Generally speaking, they all imply a redefinition of boundaries that have consequences in the movements of people and the way they organize their activities. So, we can affirm that regions are the effect of human activity, they become the historic and situated outcome of a myriad of practices and associations that define a particular common layout for these activities: a cartographically bound territory, geological or human-made landmarks, the land of an ethnic group, a network of towns and cities, a common-pool of resources or the jurisdiction of a regime of government.

The great bulk of activities practiced in a determined territory correspond to hectic private affairs of a different sort, ceaselessly carried out by its inhabitants. But neither activities nor a territory constitute a region in itself, at least not in the modern sense often applied. In addition to this layout for acting, a region is shaped by the material manifestations of those collective actors aiming to *control* and *administrate* its resources, a process that may be more or less conflictive according to the heterogeneity of interests. Disputes tend to occur when different groups inhabiting a territory claim and argue about what constitutes the public goods and who has the right or power to administrate them. Generally speaking, groups do not argue about the definition of collective interest, but about the practical consequences and privileges of controlling it. As a result, the historic trajectory of certain practices that patterned or modulated a number of activities for a period of time, which in turn gave shape to physical, administrative or psychological boundaries, is challenged by new means of intervention. A region does not exist for an individual or a group, it exists when different groups aim to take control, by consensus or force, over the administration of certain territory. It is this tension over the collective administration of a territory and the appropriation of its resources that give life to those entities which in modern times we call regions.

This chapter will unfold the historic trajectories of the Patagonian region as a changing object of intervention. More precisely, it will show the many regions contained in the, seemingly, same territorial layout across five centuries. It will delve into four periods: the time of early exploration, the waves of settlement in the early XXth century, the regional reform of 1975 under the military rule and the current technocratic web of institutions that is mostly the setting of the coming chapters. The aim is not to present an extensive chronological account about the configuration of Patagonia as a region, but to understand the processes and social actions that have transformed it in different *objects* for human intervention over time.

Patagonia, in the beginning

The region currently known as *Patagonia* is a large cross-bordered area associated to the southernmost territories of Argentina and Chile, that through colonial times and up to the late XX century has exhibited vague boundaries and changing names. If we look for an accurate geographic definition we will still find contradicting versions about its limits, extension and the administrative sub-national units composing its core[1] (see Map 1). The fluidity and, at times, diffuse character of such a large region as Patagonia not only speaks of the shifting importance of places according to changing historic relations, but also of the working power of imagination in the creation of geographic entities.

Patagonia was the name given by the Portuguese admiral Hernando de Magallanes, who at the time of the earlier European explorations in America and serving the Spanish crown, found the strait[2] that joins the Atlantic Ocean to the one named by his expedition as *Pacific*, honouring the extraordinary calm sea that received his crew after crossing the strait on November 28th of 1520. The origin of the term *Patagón* has been attributed to the mythical stature of the hunter gatherer natives sighted by the Europeans in Port San Julián on the Atlantic side of this newly explored part of southern America. In Spanish, Patagón sounds like a colloquial though distorted word for big (animal) feet – *Patas grandes*. However, another prevailing interpretation is that the name derives from the giant *Pathagon*, a character of the cavalry novel *Primaleón,* literature that might have influenced the Portuguese navigator. Presumably, when Magallanes encountered those natives for the first time he found them as frightening as the character of the novel, and called them *Patagones* (Martinic 1992; Casini 2000). Of this encounter there is an interesting quote in the writing of the on-board chronicler, the Italian aristocrat Antonio Pigafetta:

> *Departing thence to forty nine and a half degrees toward the Antarctic Pole, we entered a port to pass the winter, where we remained two whole months without ever seeing anyone. But one day (without anyone expecting it) we saw a giant who was on the shore, quite naked, and who danced, leaped, and sang, and while he sang he threw sand and dust on his head. Our captain sent one of his men toward him, charging him to leap and sing like the other in order to reassure him and show him friendship, which he did. Immediately the man of the ship, dancing, led this giant to a small island where the captain awaited him. And when he was before us, he began to marvel and to be afraid, and he raised one finger upward, believing that we came from heaven. And he was so tall that the tallest of us only came up to his waist. Withal he was proportioned. He had a very large face, painted round with red, and his eyes also were painted*

> *round with yellow, and in the middle of his cheeks he had two hearts painted. He had hardly any hairs on his head, and they were painted white…The captain named the people of this sort Patagoni* (Antonio Pigafetta, 1529, quoted and translated by Huneeus n/d: 116-21)

Henceforth, sailors named this region the *Land of the Patagonians* or simply *Patagonia* (Martinic 1992: 136). We know now that those giants who were so frightening to the westerner's imagination were the Aónikenk or Tehuelches, a nomadic hunter-gatherer ethnic group that inhabited the Patagonian steppes, who, in general, where rather pacific and friendly people.

The discovery of the inter-oceanic strait by Magallanes allowed turning round and crossing the American continent before the southernmost Cape Horn. Doubtless, it was the major geographic achievement for the control of the maritime routes to the Far East, as well as furthering the process of domination and colonization of the so called *New World*.

Once in the Pacific Ocean, Magallanes' expedition turned northeast and, after navigating some days, found a hazy coastline of abrupt forms that he baptised *Land of December,* according to the month it was first sighted (Martinic 2004: 49). A later cartographic chart of 1523 shows the Land of December as the first name recorded, by European sources, of the region located on the south-western side of America. Four centuries later the Land of December would correspond to the Chilean Region of Aysén, the area focused on in this book. Nevertheless, the earliest toponymic record was ephemeral and vanished from the subsequent maps (Martinic 2004: 50).

Around 1550, Pedro de Valdivia, the Spanish conqueror and first Governor of the Chilean Kingdom (*Reyno de Chile*), commissioned a terrestrial expedition, departing from Santiago, assigned to explore the region located on the south-eastern side of the Andes Mountains all the way to the Magellan Strait. In Valdivia's account this land was known as the *Province of the Salt and Trapananda* or *Saltrapanada.* The mission failed, due to adverse weather conditions and hostile resistance from natives, but records the shortened name of the province as *Trapananda,* which became the second name by which the central part of Patagonia was known (Martinic 2004: 50). There is no clear clue about the origin of the name, but just certainty that as time passed it became associated to the unexplored region between the Magellan Strait and the Chiloé Island on the western side of the Andes mountains. Some years later, the boundless land of southern America became part of the Kingdom of Chile, under the name of *Province of Trapananda,* as stated by the Spanish royal disposition of may 29th of 1555 (Martinic 2004: 52). Thus, without having been properly explored, a royal document placed the administrative jurisdiction of *La Trapananda* in the hands of Chilean colonial rulers.

During colonial times, successive maritime expeditions coursed along Trapananda's coastline and added further information on the coastal geography, but little about the inland territory. The terrestrial exploration was extremely difficult, due to the seemingly impenetrable territory of steep fjords covered by dense forest in an abrupt and mountainous morphology. This vague geographic knowledge, as Martinic pointed out, is reflected in the cartography, which up to the late XVII century plotted an almost

straight, compact coastline, with few islands and without ever registering the archipelagic condition of Trapananda (Martinic 2004: 59).

In the mid XVIIth century, a third name attributed to that area of Patagonia appeared: *Potrero de los Rabudos* (Field of the tailed-people). The first reference to this name was a cartographic map accompanying a historic and geographic description of the Kingdom of Chile made by the Jesuit Alonso de Ovalle. The name seemed to be rooted in the belief that the native inhabitants of this region were born with tails. In Ovalle's words:

> *There is a place between two rivers in this southern region called "Los Rabudos", due to a nation of natives that are born with tails* (Alonso de Ovalle quoted by González Kappes 1998: 75, my translation)

A century and a half later, there is second reference to *los Rabudos* in a document which gave a land concession, equivalent to the whole region, to Juan Levién, cacique of the *Poyas'* people, and loyal servant of the Spanish rulers (Araya 1998: 38). The concession was never materialised, but the importance of this record is that it shows that the name persisted for over a century.

What is the relevance of this account of successive naming? These original names are but vestiges of encounters imprinted in some medium – maps, on-board records, narratives - that have persisted up to date. Their persistence is greatly due to a set of practices linked to those early journeys of exploration. The cartographic practices of mapping burgeoned by European expansionism during the XV and XVI centuries, were probably the most creative, though not necessarily accurate, force in giving birth to geographic entities in the new world, as well as contributing to long distance techniques of control. Mapping and map-making were as crucial as the changes in navigation practices, the improvement of sailing instruments and the construction of long distance vessels (see Law 1986). Maps, drawings and the toponymy designated to newly discovered places have contributed to fix them as geographic entities In the case of the south-western region of America, the earlier names were partial associations born during the encounter with landmarks, people, and from special dates of religious or royal significance. Later, sailors, explorers and chroniclers transmitted their on-board records to well-known European cartographers and the information was imprinted into maps, which were used for further expeditions. We can note here how the process of exploration is composed of different activities before it is transformed into a map. Explorers went from wayfinding, the ability of getting around when faced to new environments, to mapping, the record of the lived experience, and from mapping to map-making, its graphic and spatial representation. As Ingold has pointed out,

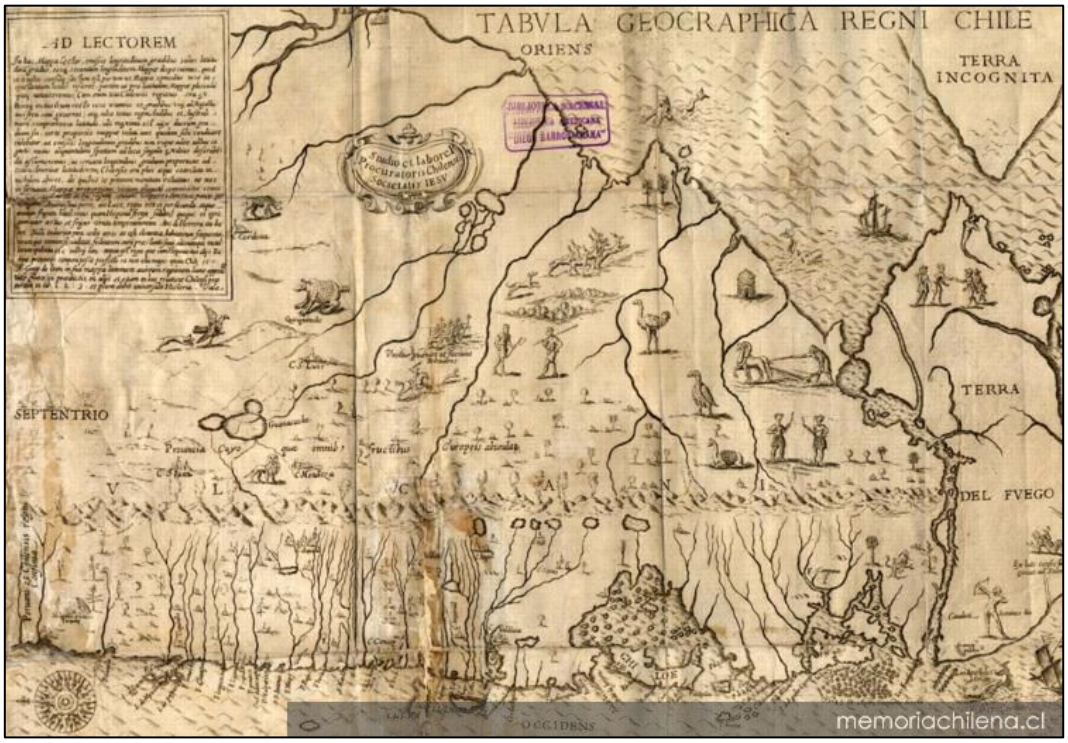
> *It is the knowledge of the region, and with it the ability to situate one's current position within the historical context of journeys previously made – journeys to, from and around – that distinguish the countryman from the stranger. Ordinary wayfinding, then, more closely resembles storytelling than map-using. To use a map is to navigate by means of it: that is, to plot a course from one* ***location*** *to another in* ***space****. Wayfinding, by contrast, is a matter of moving from one* ***place*** *to another in a* ***region****.* (In bold author's emphasis, Ingold 2000: 219)

For Ingold, mapping must be also be distinguished from map-making, because mapping is the knowledge of condensed histories about movement and exploration later imprinted in spatial representations:

> *Knowing is like mapping, not because knowledge is like a map, but because the products of mapping (graphic inscriptions), as those of knowing (stories), are fundamentally un-maplike* (Ingold 2000: 220).

Maps cannot hold all the experience of mapping a territory or the practical/quotidian knowledge of a region, which partially explained why most of the native toponymies were lost. Those indigenous names and their stories followed the fate of the many lives and traditions lost after centuries of persecution and extermination. Patagonia might have been a completely different region if it had been described following the *matrix of movements* and *toponymies* of its original people, but, unfortunately, historians and anthropologists have found only partial native records, which are not enough to reconstruct the region as it was inhabited and known by its original dwellers[3]. While acknowledging the value of chronicals, the Eurocentric account of places and native people was tinted by alien worldviews that ignored how those regions were known and experienced before the encounter (Casini 2000).

Map 4 is a XVIIth century map of the region that allows us to reflect on this. The colonial cartography set notions about places and voyages, privileging worldviews and fostering the conquering endeavour. They were but a set of practices and techniques that create images of the state of the world as seen by European eyes.



Map 4. Tabula Geographica Regni Chile, Alonso de Ovalle, XVII century (Source: National Library of Chile, www.memoriachilena.cl).

Furthermore, the cartographic methods were still precarious and the mediums for exploring the complicated and vast geographies were scarce, which made of those early maps very raw instruments that displayed silhouettes of new geographies mixed with tentative names of newly born colonial toponymies and drawings showing important features of the encounters. In this sense, we can affirm that mapping was equivalent to retelling those histories as part of the phenomenology of the encounters, a characteristic which old cartography retained more vividly during the map-making process. Patagones, The Land of Fire, All Saints Strait, Pacific Ocean, Land of December were a journey' story rather than mere names. Landmarks did not stand out as natural events, but they are born out of the pilot books and on-board records as well as the stories written by chroniclers that contributed to making the southern region of America, paradoxically, better known for the unknown. In this sense, Patagonia is a good example of the central argument developed by O.R. Dathorne in his book. For him, the Europeans did not only discover, but also *invented* the New World and thus the imagination; the supernatural and the extensive myths of golden cities became the force and fuel of further exploration, control and domination overseas (Dathorne 1994).

Myths and dreams of golden treasures were mixed with partial realities of those encounters. Expeditions' anecdotes and dramas, shipwrecks, and native uprisings were all part of the experience of unveiling the uncertainties of those encounters. The land and people around this end-of-the-world region remained for a long time in a shadow of myth to European knowledge. But myth and imagination were not just mental representations or narratives[4], they fed new enterprises and the wish to control. Proof of this is that during three centuries the main motive for exploring the complicated geography of Trapananda was the search of the mythical City of the Caesars.

Object of intervention One
In search of the Golden City of Patagonia

The *City of the Caesars* or the *Enchanted City of Patagonia* was the name which sparked interest in the region in earlier colonial times. After the successive naming of Land of December and Trapananda, the region began to be associated with a mythical golden city, populated by bearded white settlers, living harmoniously with natives in some inaccessible place in the mountain range of the southern Andes. Golden cities have had different expressions throughout history, but as to the American case there were several of them with various possible locations across the continent. Portuguese, Spanish and British crews sought them in different places around the globe, according to issues of national sovereignty and international agreements, such as the Treaty of Tordesillas. Some of these golden cities were *El Dorado*, *Cibola*, *Quivira*, and *The City of the Caesars*, which according to Dathorne, represented all secular versions of paradise (Dathorne 1994: 12).

It is difficult to say exactly what the origin of the myth was, but historians tend to believe that at least three different narratives overlapped and blended to configure a robust reality. (Latcham 1929; Estellé and Couyoudmdjian 1968: 284-85; Martinic 2004: 54). The first is about a captain named Francisco César, crew member of Sebastian Caboto's expedition that in 1526 was following the Magellan route to the Moluccas Island. After sailing past Brazilian coasts, Caboto and his crew headed south where they

discovered the *de la Plata River* and founded the Fort *Sancti Spiritu* on its banks. From this place, they organized several parties to explore the surroundings. During one of them, Captain César's crew made a larger exploration upstream and then headed to the southwest. Upon his return, César claimed to have found a wealthy region, with abundant gold and silver and inhabited by peaceful natives. The narrative ignited the enthusiasm of other crews, but without any concrete search results. The excitement lasted another two and a half centuries. According to Latcham, this event is the beginning of the denomination *lo de César* (related to Caesar) when referring to the mysterious, but wealthy region and *los Césares* (the Caesars) as the natives inhabited it (1929: 200).

A second source, a narrative that spread at the end of the XVI century, was the belief that the Caesars corresponded to a population of Incas *mitimaes*[5] that withdrew from the early encounter with the Spanish and founded a city as a refuge in the southern Andes. From this common belief stem exploratory actions undertaken by different colonial governors of the Provinces of Chile and Argentina with the specific aim of finding the Caesar's city (Latcham 1929: 201; Estellé and Couyoudmdjian 1968: 285).

The third source dates from 1540, when another Spanish maritime expedition on its way to Moluccas and commanded by Frey Francisco de la Rivera faced, a storm in the immediacy of the Magellan Strait and suffered the shipwreck of its master vessel of a fleet of four. There were hundred and fifty survivors and, apparently, a smaller group under the command of Captain Sebastián Argüello remained and settled. The story became known through the shipwreck survivors and the crew of the single escort vessel that later arrived in Spain. But, outstandingly, twenty three years later, two Spaniards rescued by a ship gave testimony to the Chilean Governor that they belonged to Argüello's original troops and affirmed that a group survived and settled in a wealthy Inca city.

In this last story we must attend to the context of geopolitical plundering that made the Spanish empire surveillant to maintaining control over the vast new territories around the Magellan Strait particularly against the British and Dutch empires. Additionally, the enterprise of sailing the stormy southern seas was extremely dangerous for the fragile vessels and thereby shipwrecks were not an unusual outcome of many expeditions. Shipwrecks at the end-of-the-world were tragedies that occurred due to failures in mastering vessels under extreme weather conditions, but as *events* they were important given that most of the times they gave way to subsequent processes of careful exploration. Shipwrecks were, to a great extent, the very origin of the golden city of Patagonia. Lost crews, confusing survivors' stories and tales of natives threw a veil of mystery over the fate of lost Europeans and native settlements that blended into a single appealing reality.

The City of the Caesars triggered a number of expeditions sent by the colonial authorities which failed in their main objective of discovery, but added valuable information about the geography of the southern region. The most fervent followers were colonial authorities, militaries and missionaries (Estellé and Couyoudmdjian 1968: 283). Governors and military officials feared that those white Europeans referred to as the Caesars, were in fact foreign forces settled in the southern region. As Vásquez de Acuña pointed out, most of the journeys to Patagonia have as central objectives; to maintain political control of the territory and prevent the intrusion of enemy nations; to

carry out the geographical exploration of a long and intricate littoral, and; to foster the conversion of natives to the Christian faith and western customs (Vázquez de Acuña 1988).

An extraordinary example that embodied the three motives stated above was that of the Jesuit Father Nicolás Mascardi, who set up a mission on the shore of the Lake Nahuelhuapi, in the northern limit of Patagonia. He carried out a veritable crusade of explorations and other actions in search of the City of the Caesars, convinced that it was populated by Spaniards lost in different shipwrecks. Father Mascardi, who through close contact with the natives from the *Poya people*, received scattered but constant information about different Europeans sighted in remote areas of Patagonia. Mascardi became obsessed with finding the City, but his main preoccupation was neither the golden treasures, nor the fear of foreign settlers, but that of European souls in need of catholic comfort. The historian Ricardo Latcham gives us a taste of the Jesuit´s persistence:

> *At the mission (of Nahuelhuapi) the Poya natives gave him vague information about Europeans sighted in the region, or traces of their presence picked up in different parts of Patagonia. The devoted missionary even wrote letters in seven languages and sent them around through the natives. On the letters heading Mascardi wrote: "To the Spanish gentlemen established at the south of the Nauelhuapi Lake"* (Latcham 1929: 239-40, my translation)

He never received any answer. The results were null as far as the Caesars were concerned, but Mascardi registered valuable information about the geography of western Patagonia and people's customs. Furthermore, and regardless of the geographical remoteness, Father Mascardi's search was not an isolated task. He was constantly reporting to the central authorities and asking official permission to initiate every search endeavour. Here we can see how Mascardi's reports and letters about the probable presence of Europeans in those regions did have an effect on colonial authorities: they exacerbated the fears of Governors about the possible settlement of Dutch and British people in the southern territories (Estellé and Couyoudmdjian 1968: 288). Those fears triggered a number of maritime military expeditions which, in addition to different rescue missions of shipwrecks, increased the knowledge about the archipelago's coastal geography.

The City of the Caesars was neither a fantasy nor a metaphor, it was the concrete motive, born from the power of imagination, to explore an unknown and harsh territory. What is more important, in colonial times Patagonia was not just associated to the golden city, but became the very region itself. Trapananda was forgotten and the region was known and recorded as *Los Césares*. (Martinic 2004: 57) All the journeys, expeditions, missionary activities, gathering of information, decrees, records, military exploration, shipwrecks, and native tales constituted both the matrix of movements and the condensed stories that create the object called Los Césares.

Some historians have focused their research on the mismatch between the persistence of a myth and the layer of reality that might have contributed to create such a myth. However, the argument exposed through this chapter is quite the opposite: myths and objects of imagination are not deviant representations of a concrete underlying reality.

They were the context and content of exploratory activity and thereby those way finding journeys became the region itself as well as mapping and map-making practices were all fed by the promise of wealth and adventure. Our judgement of those explorers' actions as wrongdoings based on myths, tales or mistakes is based upon centuries of historic investigation, scientific reasoning and modern cartographic techniques, in short, due to the consolidation of modern rationality. However, we must note that the persistence of the City of the Caesars was for a long time the main incentive for further social action in the region. Its persuasive golden promise was translated into mapping practices, and rather than a fictive image, the region became the sum of histories and itineraries made by its explorers.

Object of intervention Two
Aysén' birthday: Territory and settlement

The previously mentioned exploratory activity in the region during late colonial times did not result in any permanent European settlements or, for that matter, leave any traces of its native inhabitants. Indeed, by 1875, the *Chono* people, original dwellers of the Patagonian archipelago, were regarded as extinct (Butland 1957: 41). It is argued that one of the possible causes of this native de-population was the missionary action of Jesuits, who, equipped with the persuasive techniques of the civilizing discourse, pursued the conversion of natives to Catholicism and generated a negative current of re-settlement in the missions of Guar and Caylin islands, both located in the northern Provinces of Llanquihue and Chiloé respectively. Historic records marked the re-settlement of 300 *chono* people to Guar Island in 1710 and later, around 1756, the displacement of approximately 200 *chono* to the mission of Caylin. Apparently, the last *chono* families scattered around the archipelago were assimilated to another ethnic group, the *huilliche* or *veliche* people of Chiloé Island and later, mixed with Spanish population (Martinic 2004: 43).

The influence that the archipelago of Chiloé had in the exploration, economic exploitation and late settlement of the southern archipelagos merits extensive research, beyond the scope of this book[6], however, some historic related processes need to be mentioned here, whereas the contemporary effects of others will be mentioned in Chapter Six.

At that time, Chiloé Island was the southern limit of Spanish settlements and Castro, its main fortified city, a suitable departing port for the maritime exploration of the southern archipelago[7]. The missionary expeditions gave way to frequent spontaneous reconnaissance journeys by some of its most adventuring inhabitants. The *chilotes* – name given to the people from Chiloé -, gradually acquired valuable practical knowledge about sailing south and moving around the archipelago of *Las Guaitecas*. They learned how to navigate in the labyrinth of fjords and islands; about weather conditions and currents; the customs of native people; how to exploit natural resources; the means needed to survive, and so on (Urbina 1988: 37).

Despite this permanent exploratory activity, at the dawn of the XXth century the Patagonian region located between the 44º and 48º degrees of latitude was regarded as uninhabited (Martinic 2005:44). The exception was a small settlement in the Island of

Melinka and a few sporadic camps made by whalers and fur hunters, as well as semi-nomadic wood-cutters coming from Chiloé.

The difficulties in establishing human settlements were mainly due to a highly fragmented territory, composed by an archipelago of countless islands and fjords that create a complex landscape of inner seas and waterways, surrounded by steep mountains and covered by a dense cold rainforest. In addition to ruthless climatic conditions, the key obstacle was that of connectivity, which depended exclusively on maritime transport until the end of the XXth century.

It is intriguing that during the first half of the XIXth century, time of the early republic, the region did not register a single identifying name according to the studied records. It seems a curious paradox that the abundance of names in colonial times gave place to a nameless land. Nevertheless, at the end of the XIX century the region was gradually identified in relation to one of its main rivers: Aysén[8]. The point to make hereinafter is that we can trace a history of de-population that parallels the rich history of regional demarcation and name-giving during colonial times and later, a history of occupation and settlement that gained strength under the tutelage of the Chilean State, which marked the official birth of Aysén as a singular administrative unit in the late 1920s.

So, what was the changing objective for intervention during the early XXth century? The answer, in short, was the creation of settlements. Throughout the first half of the XXth century there were successive waves of different sorts of settlements, which decisive impulse was given in 1927 by the Chilean State through the creation of a formally bound unit: the *Territory of Aysén*. Previously, the region has consisted of parts of the provinces of Chiloé and Llanquihue, and of the Territory of Magallanes, which reflects the administrative confusion, fruit of evident official disinterest (Butland 1957: 81; Ibáñez Santa María 1973: 287). But the Chilean government, headed by the president Carlos Ibañez del Campo, aimed to make State intervention upon the region effective and, thereby, began by changing its jurisdictional status. This is how *Aysén* became the fifth name in history of the region but more importantly, a demarcated territorial body according to the new administrative purposes defined by the Chilean State.

The foundation of Aysén by the Chilean Government in 1927, first as Territory and one year later as Province, is but a fragment of a larger process intending its occupation that can be comprised in three phases. Firstly, there was a State-led strategy of exploration related to issues of national sovereignty and fixation of boundaries exacerbated by Argentinean claims over territory regarded as Chilean. Secondly and once this impasse was settled, there was a process of large land concessions of thousands of hectares granted to influential oligarchs and businessmen, who at the time transferred these land rights to capitalist societies, aimed towards the economic exploitation of the territory through cattle ranching and sheep rearing. Finally, the strategy shifted to promote the colonization of small land holders, leading to an increase of a more effective occupation of new land.

As result, by the 1920s the total population of the area, which a decade later became the Province of Aysén, was only of about 2000 people[9], of whom 300 worked on the two large estancias of the Aysén Industrial Company, one of the largest landholders in the area (Butland 1957: 80). In representation of the State, by 1916, there were two settlers

that assumed the position of sub-delegate and judge. Later, in 1920 the region gained some policemen, post agents and one public school which lacked the means to function properly (Ibáñez Santa María 1973: 289). In addition, there was an undetermined number of a semi-nomadic population of *hacheros chilotes* - wood-cutters coming from Chiloé Island – who undertook a depredatory exploitation of the archipelago's timber resources. They mostly sought the *cypress of the guaitecas (Pilgerodendrom uvifera),* a native tree with a high quality and demanded type of wood. This particular activity generated a buoyant commerce of wooden beams used for the construction of railroads ties and that was exported throughout South America (Butland 1957: 80; Martinic 2004: 112-114).

There are several elements of interest about this foundational period, some more related to State sponsored initiatives, but others occurred as self-organizing processes by groups of settlers that did not respond to top-down plans and which, only years later were regularized through land tenure programs. About the three different phases of the process of colonization is worth deepening some of its constitutive situations:

a) The bedrock of State-sponsored initiatives for the colonization of Aysén can be found in previous campaigns of inland exploration mandated by different Chilean governments with the particular aim of gathering accurate mainland geographic information, as well as the search for a terrestrial passage to the Atlantic. The decisive campaign for this phase started in 1870 with three expeditions led by the Chilean Navy commander Enrique Simpson and later, between 1892 and 1902, with the reconnaissance of Aysén' main basins by Han Steffens, a German explorer hired by the Chilean State for this particular purpose. The information gathered by both explorers was fundamental for representing the Chilean position in the border disputes with Argentina. Those diplomatic differences were, indeed, resolved through the arbitration of the British crown under the rule of the Queen Victoria in 1902 and took into account information presented by both Chilean and Argentinean explorers. As an intended effect, the limits dispute propelled a truly bi-national race of settlement projects in the region. In sum, the process of exploration and settlement of the late XIX century was based on national priorities of gathering information about a disputed territory.

b) The arbitration resolution allowed a process of spontaneous occupation by Chilean settlers that moved within the new borders after finding themselves in Argentinean territory. At the same time, the State started granting, around 1903, concessions for large land holdings for cattle ranching purposes. As Butland noted:

> *Once the boundary was defined, many Chilean colonists, finding themselves in Argentina, moved into the new Chilean territory, and settled, in particular, in the Simpson and Coyhaique valleys. This was the first major immigration. Individual and family colonization was one feature of the settlement of Aysén, but of considerable economic significance was the large concessionary colonization similar to that operative in Magallanes. In 1903 the Aysén Industrial Company was given its first permit of occupation in the valleys of the Coyhaique, Ñirehauo and Mañihuales rivers in the core of Aysén Province for 20 years, 'for the rearing, breeding and utilization of all kind of livestock'* (Butland 1957: 77-78)

The conditions required to be granted large land concessions included several obligations as colonizing agents. One of them was the settling of foreign families, preferably British citizens or settlers coming from British colonies, who were regarded

by central authorities as more fit for a type of colonization based on cattle ranching and sheep rearing (Butland 1957: 78; Martinic 2004: 137). Another important obligation was to establish a regular service of maritime transport that would connect the region to the northern city of Puerto Montt (see Map 5 in Annex 3).

The degree of advancement of these large colonizing projects was rather erratic. Some of them did not get further than being societies on paper. As a result, years later, these huge estancias were regarded as insufficient for an effective occupation of the territory and conflictive as colonizing agents[10]. The spontaneous process of settlement became more relevant:

> *People arrived in Aysén and cheated the law – a la mala -, evading the large land concessions working in the region and advancing to the most incredible and inaccessible places to settle, where they would not disturb anyone and be disturbed* (Ivanoff 2003: 492, my translation).

The State rulers, readdressing the previous policy, decided instead to favour the entitlement of spontaneous settlers and to actively promote colonization, attracting new small landholders. The first strategy pointed to both spontaneous Chilean settlers returning from Argentina and temporary workers who, attracted by the prospect of economic activity around the estancias, had brought their families and were already settled. For this first wave of migrants the government decided to facilitate access to land through a relatively quick mechanism of entitlement. In the second case, the enticement for new settlers was to grant the tenure of a considerable amount of land. In fact, the legal definition of small property for the case of Aysén was rather idiosyncratic. According to the colonization law of 1930, the surface to be claimed in Aysén was fixed at 500 hundred hectares for each male head of household or widow with descendants and 50 more for each son and daughter (Ibáñez Santa María 1973: 281).

A cautionary note is needed at this point: we cannot presume to view Aysén as a homogeneous territorial unit. It has an extremely rugged environment with many different types of ecosystems. For instance, the Coyhaique and Simpson Valleys, as well as other areas close to the Argentinean border, were more suitable, though far from ideal, for an agrarian type of colonization, whereas others located in the coastal zone, which included the fjords and the archipelago areas, presented poor soil quality, heavy rainfall, and an abrupt geography which made these large surfaces of land very attractive on paper, but rather insufficient as economic units, even in self-sustaining terms. Nevertheless, the coastal area was a permanent destination for spontaneous population, particularly by settlers coming from Chiloé who were more accustomed to maritime environments. In these cases the process of land tenure regularization also occurred, but at slower pace.

c) The third situation worth highlighting when speaking of Aysén's colonization is that was part of a broader State policy aimed to lessen the effects of the 1929 financial crisis that affected Chilean exports, which particularly marked the decline of the nitrate industry in northern Chile. This international crisis hit the nitrate mining workers hard and raised unemployment to dangerous levels. Compelled by popular discontent, the State decided to promote a heavy colonization plan opening new land for agrarian use.

(Ibáñez Santa María 1973: 278) Aysén was central in this State led strategy and came to represent the *New Frontier* (Butland 1957: 81).

In sum, we have seen throughout this section, that during the late XIX century and the first half of the XX, the object of intervention was the territorial definition of Aysén as an administrative unit and layout for colonization. Thus, our object of intervention was explored, measured, delimited, subdivided, granted, fenced, and settled. The process started through exploratory actions mandated by the State in order to gather useful knowledge for the further endeavour of occupation and settlement. Later, new actors acquired a more visible role in the configuration of the colonization process; landlords; estancia workers; small landholders, wood-cutters, and, slowly, but increasingly active, State agents.

Object of intervention Three
Pinochet' Regional Reform: the dictator's new road

A third interesting period in the constitution of the Region of Aysén as an object of intervention started in the 1960s, within the national process of planning for administrative de-centralization and reached a peak in 1974 with the Regional Reform imposed under the military rule of General Pinochet. During this period, the main actors driving the configuration of territories as objects of intervention were professional planners.

In 1965, under the presidency of the Christian Democrat Eduardo Frei Montalva, the territorial strategy was nested in the National Office of Planning (ODEPLAN), whose experts conceived a regional division based on a hierarchy of a reduced number of poles of economic growth and a few subordinated units (Montecinos 2005: 456). The approach was based on European planning models and in particular on the theory of Poles of Development of the 1960s (Szary 1997; Vásquez Barquero 1997: 6). The pole approach was developed following the work of Francois Perroux who elaborated a Schumpeterian view where the emergence of new activities in a concrete territorial locus - city, area, industrial agglomeration - generates productive and spatial inequalities, which in turn were seen as effective inducers of local development (Vásquez Barquero 1997: 6).

Nonetheless, the complete unfolding and application of this territorial strategy of development poles occurred a decade later through the Regional Reform planned, executed and imposed by decrees of 1974 and 1975 during the dictatorship of Pinochet[11]. In terms of its original design, Pinochet' Regional Reform lasted unmodified until 2007[12] .

The reform implied the transformation of the previous political-administrative division and, for the first time in Chile, it created a sub-national intermediate unit called a *Region*, hierarchically placed between the Country – *el País* - and the provinces. Conceptually, the *Region* follows the logic stated in the manifesto "National Restoration and Regional Development" by the National Office of Planning in 1973:

> *Processes of social consensus and cohesion can be generated more easily if we use an intermediate geographic frame of reference, which, if compared on the one hand, with the Country as a whole (a unit that is too large as to provided efficacious collaboration from the community) and, on the other, the locality or province, too small and too based on local loyalties as to guarantee the efficacy of such process. The region appears as the adequate territorial unit for the previously mentioned purposes* (National Office of Planning 1973, quoted by Boisier 2000: 88, my translation).

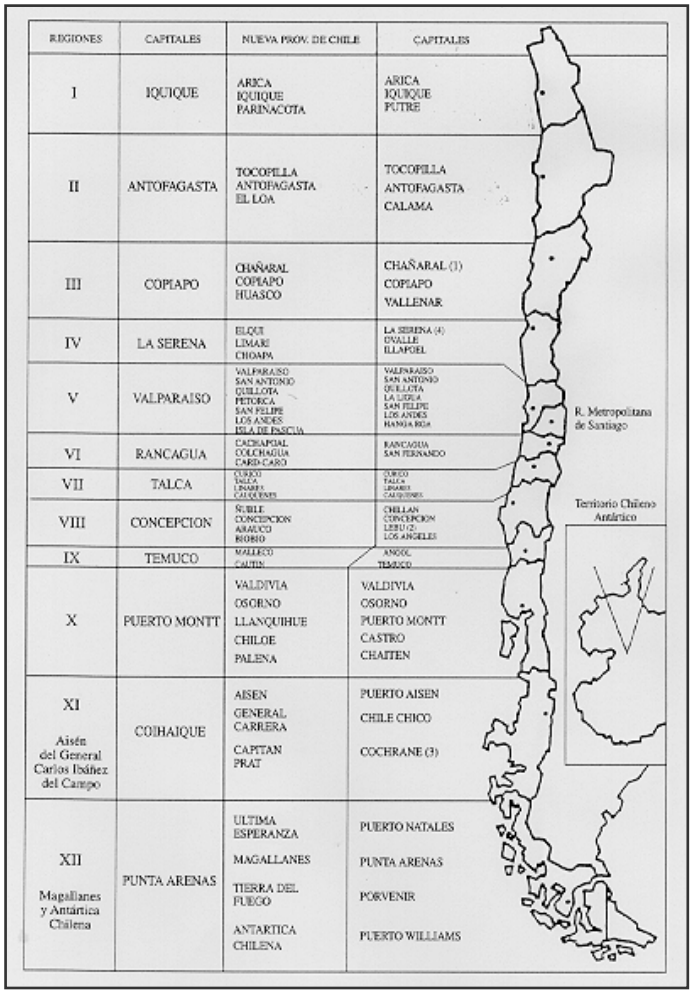
For some, the regionalization of Pinochet was nothing but an adjustment of the previous planning done during the government of Frei Montalva. However, there were substantial changes in terms of political control. While is true that the reform implied an administrative de-centralization, on the other hand, it extended political control of the central State over new territorial units with clear authoritarian purposes (Vergara 1982; Szary 1997:439; Monje 2002:75). On this point, I adhere to Boisier, who argued that, besides the creation of an unprecedented category – the region -, and the elimination of a previous one – the department – the reform, above all, installed new territorial institutions corresponding to each administrative level: national, regional, provincial and communal whose authorities still were centrally appointed by the President.

> *It was a well assembled tree, in which the movement of every leaf would not go unnoticed* (Boisier 2000: 92, my translation)

The technical process of regionalization was done by a team of planners of an *ad hoc* institution appointed by the militaries in 1973; the National Commission for the Administrative Reform (CONARA). The territorial division was organized around the following criteria: each Region must have a pool of natural resources which support a basis for economic development, an urban-rural structure that guarantees a minimum level of services for the regional population and, a central location to act as a core for the spatial economic structure (Montecinos 2005: 458) As we can deduce, the reform never intended to build democratic administrative structures, but to create semi-autonomous regions from the perspective of economic poles.

Map 6 presents the sober graphic representation of the regions and subordinated levels as it was sketched by the CONARA in 1975.

In practical terms, the political-administrative division of Chile was streamlined to suit its slim geography. It is made of 13 regions, 55 provinces and 328 communes. Regions are listed correlatively from north to south, each one having a roman number followed by a proper name. The exception is Santiago, located at the centre of the Country, and called Metropolitan Region and lacking a roman number. The importance of this chart is that it embodies the hierarchical military thinking in a single clear cut drawing, where lines are limits of self-contained units called regions and points represent those main capital-cities which were to play the role of poles of development. In this new nomenclature, some regions were devoid of popular names and, instead, received new denominations. Outstanding examples are two Regions that have long martial names honouring military figures[13]. The roman numbers of the regional division are but a symbol of the normative tone and structured thinking, so appealing to military culture, but so detached from local history, territorial identification and native toponymies.



REGIONES	CAPITALES	NUEVA PROV. DE CHILE	CAPITALES
I	IQUIQUE	ARICA IQUIQUE PARINACOTA	ARICA IQUIQUE PUTRE
II	ANTOFAGASTA	TOCOPILLA ANTOFAGASTA EL LOA	TOCOPILLA ANTOFAGASTA CALAMA
III	COPIAPO	CHAÑARAL COPIAPO HUASCO	CHAÑARAL (1) COPIAPO VALLENAR
IV	LA SERENA	ELQUI LIMARI CHOAPA	LA SERENA (4) OVALLE ILLAPEL
V	VALPARAISO	VALPARAISO SAN ANTONIO QUILLOTA PETORCA SAN FELIPE LOS ANDES ISLA DE PASCUA	VALPARAISO SAN ANTONIO QUILLOTA LA LIGUA SAN FELIPE LOS ANDES HANGA ROA
VI	RANCAGUA	CACHAPOAL COLCHAGUA CARD-CARO	RANCAGUA SAN FERNANDO
VII	TALCA	CURICO TALCA LINARES CAUQUENES	CURICO TALCA LINARES CAUQUENES
VIII	CONCEPCION	NUBLE CONCEPCION ARAUCO BIOBIO	CHILLAN CONCEPCION LEBU (2) LOS ANGELES
IX	TEMUCO	MALLECO CAUTIN	ANGOL TEMUCO
X	PUERTO MONTT	VALDIVIA OSORNO LLANQUIHUE CHILOE PALENA	VALDIVIA OSORNO PUERTO MONTT CASTRO CHAITEN
XI Aisén del General Carlos Ibáñez del Campo	COIHAIQUE	AISEN GENERAL CARRERA CAPITAN PRAT	PUERTO AISEN CHILE CHICO COCHRANE (3)
XII Magallanes y Antártica Chilena	PUNTA ARENAS	ULTIMA ESPERANZA MAGALLANES TIERRA DEL FUEGO ANTARTICA CHILENA	PUERTO NATALES PUNTA ARENAS PORVENIR PUERTO WILLIAMS

Map 6. Chile's administrative chart after the Regional Reform of 1975 (CONARA, in Szary 1997)

Despite the simple and schematic representation of the reform reflected in the chart of Map 6, the views and mechanisms to undertake its materialisation were far from monolithic. Conceptually and ideologically speaking there was an underlying struggle about how to implement the reform. At the beginning, the team of experts of CONARA followed the normative bias, so akin to military strategy, by deepening the planning of hierarchical economic poles from the 1960s. Later, this normative view gave way to a liberal approach that gained strength under the increasing influence in Pinochet' regime of the economists known as the *Chicago Boys*[14]. According to their view, regional development was a by-product of a national development strategy oriented towards economic liberalization and free markets. To Pinochet' neoliberal economists there was no need for any particular regional planning, because the territory would be spontaneously ordered according to market-oriented criteria. In the liberal approach to territory the State would just guarantee every region the political conditions to make free use of its advantages to compete in the international markets (Daher 1994; Szary 1997; Boisier 2000).

Of course, the *no planning* approach was a type of planning, ideologically biased by neoliberal economists indoctrinated and influenced by the Chicago School of Business. Regional policy was indeed economic policy, oriented to favour export-oriented activities and, as a consequence, regional development was thought of as a by-product of globally functional territories.

But not everything was lost to the military planners, as they, themselves reserved a scope for action beyond and above the liberal approach to regions. They accepted the reduction of planned intervention in those regions that were clearly functional to the export-oriented approach and, instead, adopted a strategic tutelage on peripheral zones such as Aysén invoking the "Doctrine of National Security".

The military's Doctrine of National Security resembles those fears that colonial governors had in times of the City of the Caesars. They feared that the extensive and rugged territory could favor the strategic interests of potential enemies, either the 'internal enemy' meaning possible re-groupings of anti-regime movements that would eventually lead to a guerrilla type insurrection, or external enemies as consequence of a new limit dispute with Argentina[15].

What changes did the Regional Reform bring to Aysén? In formal terms, a new name arose through this process; the Province of Aysén became the martial *XI Region of Aysén of the General Carlos Ibañez del Campo,* which was fortunately reduced by sober institutional use to simply *XIth Region*. Indeed, the new name proposed by the reformists referred to the military man and president who granted Aysén a territorial body and administrative status in 1927. A truly historical loop, because the region as such had "officially" acquired a delimited territory under the ruling of another military regime: the government of the General Ibañez del Campo in the 1920s. As an administrative consequence, the Region was subdivided in four provinces and ten communes, four of which were set along the coast[16].

Pinochet made of Aysén a symbol of military strategy and of military territorial approach. As Boisier keenly argued, the regional reform for the military was a matter of professional bias: *The concept of territory is to the military culture what the market is to the economist* (Boisier 2000: 90). The central medium of intervention in this case was the building of roads, in particular, the construction of the so called *Southern Highway of President Augusto Pinochet* later, simply known as *Carretera Austral* (Southern Highway). The Southern Highway is a gravel road of an average six meters wide that crosses the abrupt geography of Aysén and is a veritable spinal cord, stretching from Puerto Montt in the north, down to Villa O'Higgins in the south (1.240 kilometres long, see Map 5 in Annex 3). Despite its humble components (layers of rocks, sand and gravel), its construction was a monumental task due to the presence of critical geographical barriers, as well as a lack of solid surfaces and implied the full deployment of all military logistics. In three sectors the road is cut off by insurmountable fjords and connected by maritime routes through mid size *roll-on roll-off* type of ferries. Its design was commanded by the Military Engineering Group and the Ministry of Public Infrastructure, and the fieldwork was done to a great extent by the Military Task Force (Cuerpo Militar del Trabajo). Almost fifty people, mainly unranked militaries, lost their lives during the critical peak of the building process (Martinic 2004: 406).

The Southern Highway has a history that dates back to 1968 when, during the presidency of Eduardo Frei Montalva, a project was developed to build a north-south longitudinal road for Aysén. Before 1968, there was no terrestrial connection to the rest of the country, just transversal roads from east to west which connected the inner valleys of Aysén to the few small and precarious ports at the coastline. Every entrance and departure to and from the region followed either the maritime routes to Puerto Montt and Castro, or travelled on Argentinean roads through a few mountain passes, a dependency that was seen as unreliable by the militaries. Thus, long after the process of exploration and colonization was settled, the integration of Aysén to the rest of the country through a terrestrial road was still a sensitive issue and a demand of its inhabitants.

In terms of connectivity, the objectives of the Southern Highway were twofold: to avoid the dependency on Argentinean roads as exclusive terrestrial access to the region of Aysén and to offer an alternative to the maritime routes between Puerto Montt and the Patagonian coast (Grenier 1997: 75). For these reasons, Pinochet decided to continue the previous project and, in 1978, gave a new and decisive impulse to this longitudinal road. Its construction, though, implied different stages that went beyond the dictator's ruling, continued through three democratic governments and completed the connectivity of the initial projection with the southern branch open to public use in 2003 (Martinic 2004: 402-405).

The construction of the Southern Highway is a history of continuities and discontinuities. Continuity, as it was a project materially built over a period of nearly 35 years, through six governments with different budget priorities and intensity of work on its construction. Discontinuities, because the aims, mediums and even the highway design itself changed according to the conceptual and ideological bias of the rulers in charge. During the dictatorship, road building was the military way of securing the control and management of settlements and hinterlands as well as a technical approach to the idea of progress based on territorial occupation and connectivity.

The Dictator' Highway was his most darling oeuvre. It represented both the military conceptualization of territory as a layout for geopolitical strategy and, in the magnitude of its pharaonic construction, an impressive demonstration of military force and cohesion[17].

Object of intervention Four
Clustering and zoning: a technocratic approach

Recently, the stability of the XI Region of Aysén as an object of intervention is again in question due to the arrival of new economic activities and institutions that are re-shaping social practices and, as an unintended consequence, increasing the number of controversies around the use and planning of the territory.

I identified two broad interconnected processes that since the decade of the 1990s play a concomitant role in the attempts of making Aysén a more stable object of intervention: the consolidation of a complex web of public institutions and the booming of economic activities producing globally demanded commodities. Both converge

towards new forms of representation that attempt to stabilize controversies through the technical management via planning of the territory and the spatial clustering of activities. In short, they represent processes with a techno-political approach to social life. Let me explain what is meant by that.

One of these processes stems from the State. Its regional representatives in Aysén have consolidated a politico-administrative apparatus in the capital Coyhaique composed of a web of technocratic institutions that mirrors, on a modest scale, those of the central government in Santiago. It seems extraordinary that by the 1990s the presence of public institutions was one of the highest in the country, considering that was the most peripheral region of Chile during great part of the XXth century. Public agents were attracted to Aysén through monetary compensations for working in isolated zones, which in certain cases double salaries of employees of the same rank in other parts of the country (Valdés 2003: 501). Proof of that is that the influence of the public sector in the regional economy is the highest of all Chilean regions. According to data of the Chilean Central Bank I have analyzed, in 1996 the participation of the Public Sector in the Gross Domestic Product (GDP) showed a national average of 3,5% (including all thirteen regions). In the case of the Region of Aysén the public sector represented 11,6% of the GDP (Banco Central de Chile 1998). This share is not only the highest participation of the public sector in all regional economies, but it shows the importance that institutional budgets and public agents' salaries have on the local cash flow.

But not everything is about quantity; an important qualitative change is the increasing professionalization of these public agents with a higher share of people educated in universities of central Chile and abroad, who have internalized the brokerage role of the New Public Management[18]. But there is something else, as we will see by the end of this section, the training for a relevant part of this personnel has been directed towards the management of something other than services to people; they are geared towards serving different categories of 'nature': natural resources, parks and reservations, wildlife, etc. This aspect of the composition of public agents is explained by the fact that they are intervening in a region with the lowest population in the country and the third largest surface of all Chilean regions[19]. In addition, as mentioned in Chapter One, over 83% of the land of the Region of Aysén, about 9 million hectares, is state-owned and of this, more than 50% is under the National System of Protected Areas. Hence, these are state agents mostly trained to administrate large areas of public resources.

The second situation bringing about changes is that the material base of production suffered a sudden redefinition, triggered by different processes of commoditization that responded to the increasing links that newcomers have with global trade networks. The region of Aysén somehow reached the status of global functionality that the neoliberal economists 25 year earlier only dreamt of. The hake fisheries boom in the mid 1980s, the mushrooming of salmon farming in the 1990s and the increasing importance of tourism in the 2000s are among the most significant activities in Aysén, creating an exportable base of production as well as effective national and global trade networks.

This global functionality is not coming out of the blue. Historically, Aysén' settlers have run short of supplies and have had to make enormous efforts to put their few commodities into the market. A famous saying, endlessly repeated by locals, is very telling at this point: "Chile stops in Puerto Montt", the last city in Region X properly connected to the rest of the Country by a paved highway (see Map 5 in Annex 3). Local

authorities, politicians, scientists and entrepreneurs have manipulated the grassroots feeling of being in the margin of national development priorities and, through many calculated actions and deployment of symbols, readdressed it to openly welcome every new economic activity inserted in global trade networks. Development, for Aysén elites, is nowadays understood as the capacity to create effective trade networks with both the rest of Chilean regions and internationally.

Challenged by open conflict with competing sectors, local leaders and non-profit organizations, the representatives of these globally functional economic activities have developed an exclusionary discourse about the use of the territory. As a consequence, public and private experts have developed a territorial planning approach to economic activities in order to tackle the increasingly conflictive organization of the spatiality of production. Hence, the physical layout of Aysén has been translated by professional teams into different maps and documents of territorial planning, zoning, coastal management and consensus-based development strategies, which are validated through the utilitarian use of participatory methods (Estrategia de Desarrollo Región de Aysén, 2000; Atlas Región de Aysén, 2005; Plan Regional de Ordenamiento Territorial, 2005).

Before continuing, I shall briefly explain how contemporary theories about regions have permeated the practices of regional planning and strengthened the positions and perceptions that different groups have in Aysén. The process of translation of scholarly thinking to practices of regional planning in a place as isolated as the Chilean Patagonia, is fundamental to our understanding that actual ideas of territory partly stem from a technocratic approach to social life geared through the normative engineering of economic performance and imprinted in segregating maps of activities (see Maps 8 and 9).

A revival in the interest on regions is identified in the early 1980s (Storper 1997: 3), and, a decade later, became a vigorous trend, labeled by some as 'new regional geography' (Paasi 2002: 802). Conceptually, this 'rediscovery' of regions was nurtured in novel views coming from the social sciences about the role of territories in economic development, particularly in how regions became a central unit of coordination of economic life "after the demise of mass production" (Storper 1997: 3-4). A hallmark of this academic trend was the work about the distinctive functioning of industries in northeast and central Italy by Piore and Sabel in 1984, which opened, for the English-speaking world, a re-conceptualization of regional economies in a post industrial scenario, under the label of flexible specialization (Piore and Sabel 1984). According to Storper, this renewed interest in regions created three main 'schools': those interested in institutions, those focusing on industrial organization and transactions, and those who concentrate their attention on technological change and learning (1997: 4).

Storper has taken up the contributions and pitfalls of every school and condensed his view as follows:

> *[T]he most general, and necessary role of the region is as the locus of what economists are beginning to call "untraded interdependencies", which take the form of conventions, informal rules, and habits that coordinate economic actors under conditions of uncertainty; these relations constitute region-specific assets in production. These assets are a central form of scarcity in contemporary capitalism, and hence a central form of geographical differentiation in what is*

> *done, how it is done, and in the resulting wealth levels and growth rates of regions* (Storper 1997: 5)

Although in my opinion these views narrow the importance of regions to merely economic functions, we need to take their influence seriously since, in the case of Aysén they have become mainstream conceptual orientations with practical consequences in institutional settings[20]. This is manifested in two different approaches to regions, the most liberal is developed in the form of *industrial clusters* and the most institutionalists through *territorial zoning,* but both are within the prevailing and accepted technocratic views of regions in the current institutions of Chile. These approaches coexist; indeed, they present a certain convergence to instrumental territorial planning and mechanisms of coordination according to the interests of economic actors. On the other hand, they differ in their definition of the adequate territorial unit for intervention according to their roles and professional bias. The public services, use zoning and planning for regulatory purposes and therefore have developed a professional bias to administratively bound territories, whereas the private actors have shown a flexible orientation to the boundless topography of sectoral networks.

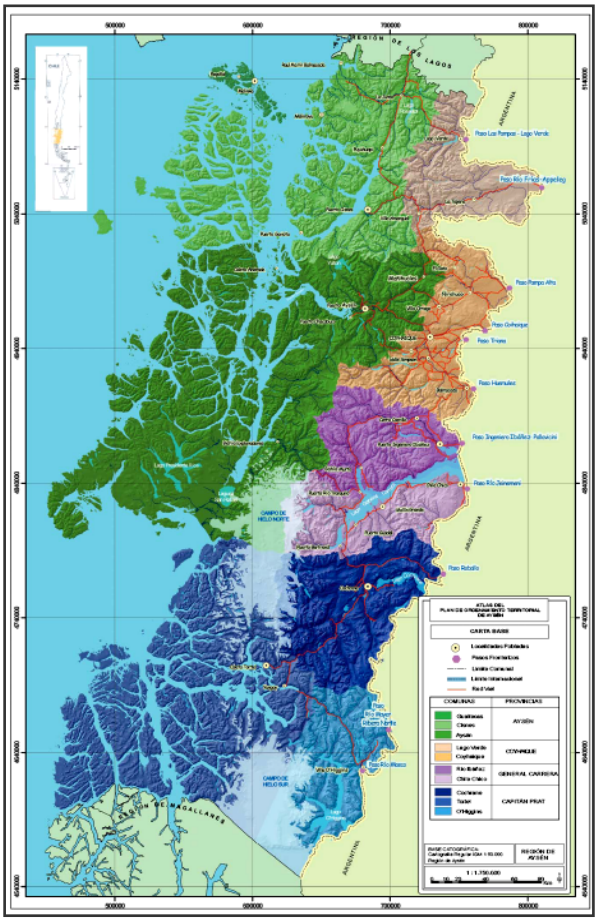
The economic cluster approach to regions has been applied in the case of salmon farming in Aysén, and some of its effects will be explained in chapters Six and Seven. But for the sake of this section, let us state that Chilean salmon farmers subscribed to the concept of industrial clusters developed by American economist Michael Porter to make the positive effects of geographical concentration and industrial agglomeration[21] visible. The managers of the Chilean Fish Farmers Association – SalmonChile - advised by business school scholars, have successfully enrolled national authorities to impulse the idea of the "Salmon Cluster" as a mechanism that, making efficient use of territorial proximity, will be able to enhance coordination among competitors, services suppliers and State agencies (Montero 2004; Vergara et al. 2004).

The institutionalist approach of territorial zoning has come from State bureaus such as the Regional Office of Planning (SERPLAC) and the Regional Government of Aysén. Moreover, international development cooperation given by the German Technical Cooperation Agency (GTZ), has been of fundamental importance for the technical support 'accompanying' the planning process. The active participation of the German Agency in the process is another example of the performative role of international development institutions in translating conceptual frames coming from the Western academy and put to work in other contexts and countries.

Thus, the aforementioned institutions have been the main technical and political agencies that, by means of experts' interventions and participatory approaches, aimed to resolve controversies applying new techniques of planning, whose results are translated to sophisticated socio-spatial representations (see Maps 7, 8, and 9). These attractive representations require new and increasingly complex skills; the recollection of data; the organization of complex data bases; the use of satellite images; the command of Geographic Information Systems (GIS) software, etc. The output of this process is finally organized and deployed in layers that both segregate and link space and data according to social and physical criteria determined by its creators. These images constitute geo-referenced inscription devices done by computer simulation, transformed

into regulatory decrees to be finally presented in a Regional Atlas, the ultimate form of a visual claim of truth in all modern times.

Map 7 is the cartographic base of the Region of Aysén as it is presented in the Regional Atlas. It was made by computer techniques and GIS software that, with different colors, represents the ten Communes, in red lines the main roads, and in dots the main cities and towns. The tridimensional aspect of the image is given by the management of colors representing the main depths and heights of territorial morphology as seen from satellites outside of the Earth's atmosphere. It is amazing how this image creates a strong sense of realism when a view similar to this can only be experienced by astronauts or taken by satellite pictures. Are we getting closer to a bird's eye-view through these representations? In strictly perceptual terms the answer is no, but our scientific conceptual framing of reality makes us feel at ease in assuming that these representations are the best method we have to know certain phenomena.



Map 7 : Cartographic base of Aysén Region in Atlas of Aysén, (Secretaría Regional de Planificación y Cooperación XI Región et al. 2005).

At this point we need to recall the first pages of this chapter to understand that the early Patagonian maps, made by those who were looking for the City of the Caesars, were a valid representation of 'reality' for people in the XVIth and XVIIth centuries. So let's

convene that the current textured maps made by satellite images correspond to 'reality', but as it is defined by modern mapping practices and techniques.

Here it seems interesting to quote the work of Daston and Galison, who wrote a magnificent book about the transformation of scientific objectivity through the analysis of Atlas-making. Although they use a different example, they get the point right in reference to the value of the latest kind of Atlas images generated by computer simulation:

> *These images no longer* ***represent*** *a particular fluid at a certain place and time; they are products of calculations hovering in the hybrid space between theory and experiment, science and engineering. In some of them, making and seeing are indistinguishable… Representation of nature here gives way to presentation: of built objects, of marketable products, even of works of arts. Out of the fusion of science and engineering is emerging a new ethos, one that is disturbing professional identities left and right* (In bold authors' emphasis, Daston and Galison 2007: 47)

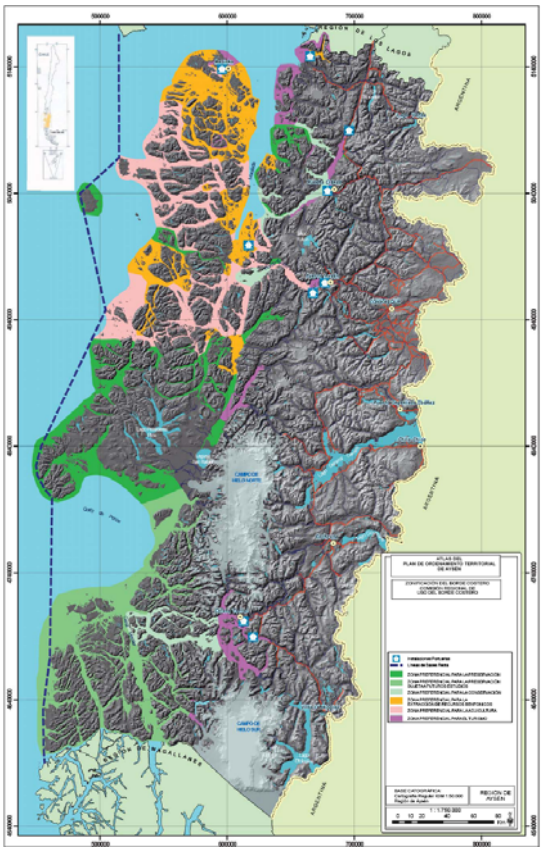
Daston and Galison used computer simulation of fluid flows as an example, but one can replace it by any other phenomena represented through computerized techniques, as in the case of an image representing a whole region. And here we arrive at a critical point in this section: *the object of intervention is not the region in itself, but its technical representation.*

Maps 8 and 9 are examples of the layering of realities reached by these techniques. Map 8 shows different colors for the spatial representation of economic activities in the coastal area of Aysén according to an exclusionary zoning plan. The map indicates preferential areas for the practice of certain activities and excludes others. Different tones of green represent preferential conservation zones; yellow represents benthic fisheries; rose, preferential zones for aquaculture; and purple for tourism. The Regional Coastline Zoning of Aysén was the first of its type in the Country, it was made official by Supreme Decree N° 153 of the National Ministry of Defense and promulgated on May of 2005 (Secretaría Regional de Planificación y Cooperación XI Región et al. 2005: 29). The coastal plan of Aysén heralded a trend followed later by other Chilean regional governments and NGOs for whom the zoning techniques became a tool to extend their influence over marine resources and the maritime space.

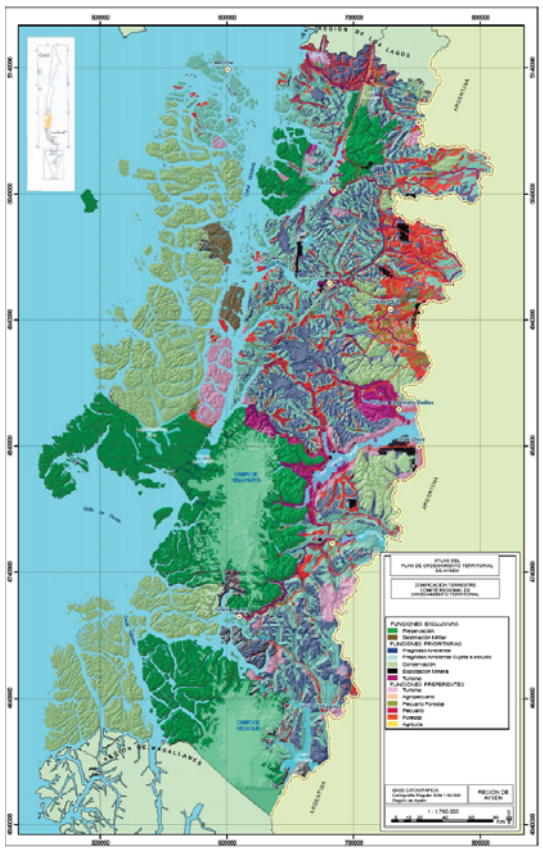
As indicated by Visser, the trend towards coastal zone management is of recent origin and made explicit two biases or restrictions for the governing of coastal activities and territories:

> *Firstly, Integrated Coastal Zone Management (ICZM) primarily serves land-related technical and macro-economic goals. Apart from the physical safeguarding of the land, its major concerns are the large-scale demographic, urban and macro-economic developments in the coastal zone. The less populated coastal areas, and the existing social and environmental differentiation of fishers' communities and their access to coastal resources are mostly ignored. Secondly, ICZM is a government tool. The dominant approach to resource management views ICZM as an instrument enabling governing bodies to intervene by means of rules and regulations. This approach is inherently biased towards politico-economic and administrative goals. Moreover, the technological and infrastructural policies and projects of interventions demand a standardised*

description of the coast in terms of administrative borders and systems boundaries (Visser 2004: 32-3).



Map 8. Regional Coastline Zoning (Atlas of Aysén, Secretaría Regional de Planificación y Cooperación XI Región et al. 2005: 28)



Map 9. Terrestrial Zoning (Atlas of Aysén, Secretaría Regional de Planificación y Cooperación XI Región et al. 2005: 30)

Map 9 is the layer that shows the mainland zoning and follows the same criteria of exclusion as Map 8, but is applied to ground-based economic activities: mining, agriculture, cattle ranching, forestry and tourism and, in some cases, a combination of two of the aforementioned activities.

The places where these technocratic instruments of planning are produced are the State agencies mentioned above, but the source of information for the zoning comes from workshops that represent variations of the Multi Stakeholder Platform (MSP) approach. In this case, MSP and its different variations are techniques designed to place divergent interest into one consented chart, with special emphasis on the process of self-validation through the dubious logic of 'participation'. These participatory mechanisms have been sufficiently criticized by questioning issues of representation and exclusion, so I'm not going to deepen the criticism about them in this section. Only to indicate that in the case of Aysén' territorial planning, the stakeholders were in practice representatives of economic sectors and, in the best of cases, they included a small

fraction of civil society in the form of NGO members and representatives of towns and settlements.

The point to make here is that the maps shown above reflect a profound paradox because most of the planning, based upon a *consensus* of stakeholders' platforms, generates *exclusionary* areas for the practicing of stakeholders' activities and therefore fuel more disputes. So, in these maps and documents, the coexistence of actors is ruled through the separation of activities, not by enhancing the synergies of exchanges as they occurred in daily life. Through these techniques we arrive at an absurd paradox of the management of the diversity of human activity through the homogenization of criteria for its practice.

The technocratic games and the instruments they generate tend to be mere exercises with low, or even null value on the field level to enforce norms, conducts and micro planning. What is the reason? We must all agree that social life is complex, but this complexity looks quite sophisticated when experts of territorial planning translated it into the plain surface of a map, satisfying the interests of economic sectors and, a rather different view when seen from the local perspective of the ones in need of coping with different livelihoods strategies. There is an insurmountable distance between these technical maps and lay people, not because they lack the qualifications needed to interpret them, but because most of the time they do not reflect the local dynamics and practices in places where State institutions simply do not exist.

In sum, we currently face a technocratic approach to the region of Aysén with only slight variations of scope, given the different interests of economic sectors and the role of public institutions to enforce, control and manage the planning instruments. This technocratic approach either takes the form of regulatory institutions of territorial management - in practice with a very low enforcement capacity due to restricted budgets and impracticability of applications - or – it is transformed into a territorial mosaic of economic activities, whose highest expressions are exclusionary zoning and the industrial cluster.

Experts defend the value of technical instruments of territorial planning and zoning under the logic that conflict can be resolved by applying techniques for the social engineering of groups through the MSP approach and the enforcement of territorially-oriented norms. This may seem correct on the expert level, it might be even work smoothly during participatory workshops, and no doubt looks nice on maps and documents, but they have definitively little to say about the local forms of appropriation of the territory and the grassroots mechanisms used to resolve controversies. That is part of an other Aysén.

The reinvention of Patagonia: Cultural turn or market-oriented opportunism?

In the second half of the XXth century, the region of Aysén and its provinces were losing their identification with the name Patagonia. Indeed, at an international level Patagonia was only associated with southern Argentina. This temporal 'invisibility' was exacerbated by the teaching of geography in times of Pinochet, where the central focus

was to present the new regionalization in the light of a re-foundational spirit so akin to dictatorships. The roman numbers of the new administrative division erased traces of previous local denominations and Patagonia, the name, was simply ignored by planners.

But the first sign of changes came during the 1990s when Chileans increasingly linked the Province of Palena and the Regions of Aysén and Magallanes to the macro-region called Patagonia[22]. The 'reinvention' of Patagonia seems to be a truly historical loop. However, this process of resurgence has no single interpretation given that its meaning has been adequate to the heterogeneity of interests and manifested in different practices of appropriation. In this sense, I deemed it important to draw upon certain aspects of the current reconfiguration of Patagonia, in order to stress the existence of synchronic processes of objectification as much as the diachronic processes presented in the previous sections.

I would like to mention at least three processes that attributed different meaning to Patagonia according to emerging practices. They become a differential source of value when transformed into objects: Patagonia in the literature; Patagonia as a trademark, and Patagonia as a culture. Later, I shall demonstrate that despite the analytical division, they tend to dissolve and integrate when described from a practice-oriented approach.

Patagonia in the literature

Patagonia is not only inhabited and shaped by territorially-based actors, but also by literary practices that through an extensive narrative have helped to create a mythical land since the first western encounter. In the case of Patagonia, literature has been a powerful source of making the region known worldwide. This type of construction that stems from literary imagination or documentary records has fed the Euro-American people with a dramatic, but highly attractive image of the *end of the world*. As the Argentinean scholar Silvia Casini argues:

> *The knowledge about Patagonia is linked to a group of founding discourses. The foreigners that explored the region have rendered testimonies with a distinctive descriptive force that have constituted a basic imaginary, which in turn have modeled the texts written afterwards. When we talked of "founding texts" we referred to the first chroniclers, travelers and scientists that crossed the Patagonia and re-created a space using particular adjectives that have endured in the Patagonian imaginary. These discourses, with the semiotic inherited from the conquest (desolation, desert, cursed land, giants and strange inhabitants), were unquestionly appropriated by subsequent foreign and Argentinean writers* (Casini 2000: 1, my translation).

Another author, Candace Slater, calls these primitive imaginaries of certain places that endure in literature and emphasize their virginal features *edenic narratives*. Her example came from the western construction of the Amazonia, but edenic narratives may also correspond to other geographic constructions such as Patagonia, because according to her, these narratives account for those few places in the world that can be defined as both *geographic entities* and *provinces of the imagination* (Slater 1997: 115).

As we have seen in the first section of this chapter, the early records of colonial times have contributed to create a mythical region, a feature that later has been translated to

other spheres of human activity. These narratives have drifted to the contemporary epoch, re-interpreted by new authors, given the particularities of time and places, and later, situational and selectively re-elaborated by people in their identification with the region and the landscape.

Following this line of thought we can identify that writers like the Frenchman Paul Theroux, the Argentineans Lucas Bridges, Eduardo Belgrano Rawson, Mempo Giardinelli, the Chileans Francisco Coloane and Luis Sepúlveda and the British anthropologist Bruce Chatwin[23] have contributed in building such representations of Patagonia. Beyond judgment of their literary quality, these narratives helped to make the region known overseas. They represent different styles and stories, but all their narratives have the common denominator of lived or imagined journeys that, in one sense or another, become a search for the transcendental through human confrontation with the brutality of nature or vice versa.

What is the value of these narratives for the contemporary constituency of the Patagonian region? In my view, we cannot reduce the artistic creation to a cultural commodity where value is embodied in an object- the book – or its many possibilities of exchange and use. It is also reductionist to limit its influence to an ideology belonging to modern Eurocentric discursive constructions, as is denounced by postcolonial critique (Escobar 2005: 65). Instead, if we enlarge the definition of value to the creative potentiality of human action as it is understood by David Graeber (2001), then it makes sense to check on the vast materiality generated from these oeuvres, which are constitutive of new processes and possibilities for action. According to this perspective, to the existence of material means that allow representation, invention and creation of this literary Patagonia, we should add the subsequent social actions that have contributed to its expansion in new realities. Books are not only written and read, they result in an avalanche of tourists and adventurers who travel to the destinations they speak of, images that are shot, natural parks that are created and guarded, scientists that find their objects of research, ethnic groups claiming land rights and respect for cultural differences, etc. In sum, narratives are transformed in a myriad of motives for action.

In this sense, the potentiality of human action through literature is infinite and becomes as transformative as the objects we create. The creative action cannot be stabilized in one single object or type of relation – one Patagonia for all – because it is opposed to any essential feature attributed to objects and relations. Creative action is contingent, relational and unpredictable, and from there stems its transformative power. (Joas 1996; Graeber 2001; Hallam and Ingold 2007). This form of understanding value allows us to see history and art not as static constructions of an *image of Patagonia,* but entangled with the quotidian and ever changing motives for human action upon the region. Patagonia, in this sense, is permanently reinvented.

Patagonia as a trademark

The salience of Patagonia as a geographic entity has grown side by side with the many groups that have recognized in the name Patagonia a trademark, that when combined to other commodities, creates added value, either in the form of territorial branding or in the form of trade-offs. In a certain way, Patagonia, the name, has become a commodity in itself with the power of endorsing tradable by-products for those groups that want to

profit from it and to those customers that are willing to pay differential prices according to territorially differentiated products. It can be affirmed that activities that match this type of demand are inserted in what are called *economies of differentiation* (Boisier 2005: 6).

However, there are several situations we need to distinguish. Patagonia, the name, is part of a market oriented strategy in the concrete cases where the region, as an abstract entity, has in itself become the source of economic differentiation: tourism, regional products, cultural patrimony, and exportable commodities, among others. For instance, certain images and values attributed to Patagonia are represented during the commercialization of fish by salmon farmers in their websites and through marketing advertisement – e.g. the purity of Patagonian water, the pristine environment, etc. Another interesting case is that tourism operators that highlight the wilderness of the landscape in their products, have stretched Patagonia all the way up to the northern IX Region of Araucanía, well beyond what historically has been considered part of it. Doubtless, a quite flexible use of geographic denomination (see Map 1).

In other situations, rather than a trademark, Patagonia has been transformed into the flagship of groups that by marking certain regional features aimed to obtain some trades-off related to territorial branding. One of these processes, which can be thought of as a contemporary form of patrimonial commoditization, are found in certain actors owning and managing land conservation projects and privately protected areas. They are linked to different land market mechanisms where private consortia buy large areas of land and transform it in PPAs using a variable combination of plots destined to private housing, nature conservation, recreational purposes and research activities. Some of these mechanisms identified in southern Chile and Patagonia are private parks, land donations to the national park system, conservation communities, eco-real estate and ecotourism-based land protection projects (Corcuera et al. 2002: 131).

Land commoditization of this kind uses a liberal land market to take a territory out of certain types of development orientation and commercial use. What are the trades-off in this case? Making Patagonia known primarily for its wilderness or straightforwardly for being a pristine environment has helped actors to impose a moral character of patrimonial protection in order to enhance 'nature's state of conservation'. This is a typically modern conception of nature and therefore of high resonance in western institutional settings (Descola 1996). Nature conservation movements used the images of Patagonia in opposition to the concrete industrial development of aquaculture, an aluminum smelter company and the construction of mega hydroelectric dams.

Among the most paradigmatic of these private initiatives we should mention *The Conservation Land Trust*[24]*,* an umbrella organization that hosts smaller trusts for the conservation of nature in Patagonia. Their main founders are the North American magnate Douglas Tompkins and his wife Kristine. The couple is developing six projects in the Chilean Patagonia and has bought circa 465 thousand hectares[25]. In addition to five large projects in the Argentinean Patagonia, we must also count the twin trust *Fundación Conservación Patagónica* with an approximate 182 thousand hectares in Aysén.

In all the market related strategies mentioned above there is an aesthetic mobilization of Patagonia by different actors who make use of an idealized place as a resource to preserve their own diverse interests and practices: salmon farmers to profit from the geophysical conditions of production; retailers to reconstitute the image of freshness

and quality; consumers to recreate "natural foods" linked to a healthy way of living; environmental movements to confront the impacts of industrialization; conservationists to defend pristine environments, etc.

The commoditization of Patagonia, understood as the source of new commodities, is not something new, but the many forms it has taken and the scale of the process is unprecedented in this region. There is an agreement that the historical contingency of neoliberal policies has had a major effect on the commoditization for exports of a new regional economy. But the distinctiveness of these changes needs to be interpreted beyond market oriented framing. The creation of value in the Patagonian case can be understood as something different from a specific type of economic relations - production relations -, different from the exchangeable character of its final product – commodities -, and different than the particular cultural biography of objects (Appadurai 1988; Kopytoff 1988). Value rests in the creativity of human action, that by means of complex associations incessantly transforms the way we relate to the material and symbolic world. This flux, the matrix of movement and the transitory associations generated by creative actions is what finally constitutes *the social life of regions*.

Patagonia as cultural identity

Patagonia is not only a mythical place of literature or a trademark, but a region embedded in a wide range of quotidian practices that are underrepresented if described just in productive terms of marketable commodities. The region as understood through this chapter, is the territorial layout that affords the interaction and daily experience of people and constitutes their base of social relations and systems of knowledge. Settlers have developed, and never missed, a sense of belonging based on experience.

> *A distinctive feature of Aysén is the legitimate pride of the actual descendants of the first settlers that have made, in less than one hundred years, everything that stands today: they built a house, cleaned a plot of land, occupied a hill, reared a family and educated sons and daughters in a place where the first lyceum arrived in the 1950s* (Valdés 2003: 501, my translation).

But this historical process of identification becomes more salient once Patagonians began using it in the form of cultural assets in the contemporary juncture of a region facing increasing pressures of internationalization and global networks. In this sense, there are situations where local groups make instrumental use of identity to confront projects or activities they regard exogenous.

Is this process of regional identification part of a cultural turn to territories? To understand the social organization of Patagonia in contemporary times we shall enquire about the history and constitutive practices of its settlers. The social recognition of belonging to Patagonia is expressed with the colloquial title of *patagón,* in clear distinction from those regarded as *afuerinos* (outsiders). There are no clear rules of adscription to becoming an insider, and therefore the condition of *afuerino* can last a lifetime, even when people spend the greater part of their lives in Patagonia. This particular sense of belonging and identification to an "imagined community" (Anderson 1983 [1999]) which is although distinct from the nation will be explored ethnographically in the next Chapter so as to delineate its consequences in the

formation of distinctive values, linkages and social institutions that stem from the irreplaceable experience of inhabiting the Patagonian environment.

Nonetheless, a warning is required at this point. This sense of belonging shall not be taken for granted. It is tempting to talk about a Patagonian identity, but I think we should abandon any defensive stance or essentialist views that could lead us to a reification of people, territories or nature. Instead, I propose to explore the empirical manifestations of territorial identification as they are embodied in local practices, symbols and objects that are also mediated by newcomers, outsiders and even the global markets. This view aims to encompass the historical basis of the process of identity formation with those of social change and differentiation that are taking place.

In my view, Patagonia is the overarching territorial layout whose flexibility is given by the levels of inclusion and exclusion of actors and subordinated territories, determined by different interfaces of action: literature, market, and customs. In all cases Patagonia is a geographic entity that situates experience and frames specific social relations and practices within a meaningful context for its intelligibility.

Conclusions: further implications on the relation Object-Region

As stated at the beginning of this chapter, changes in the region have never stopped. The solidity of a territorial layout vanished when the heterogeneity of social practices transformed it into a fluid and variable object. Contrary to geographers that have thought of regions in terms of space, this chapter proposes a view in terms of social objects. With this aim, I spotlighted the Patagonian region as an object of intervention, focusing on four moments in its modern history: a land to be explored and a golden city to be found; an economic space for occupation and settlement; a geopolitical object of planning, and; finally, an institutional web of techno-political management.

The history of regions as objects of intervention does not have a single meaning. In the narrative exposed in this chapter, the region appeared under different emphasis based on the group of practices and rationales for intervention highlighted by the author. The flux of views and motives for action upon the region will change as many times as the analyst is able to describe different processes of intervention and identify emerging responses.

So far, the region has been presented as much as possible as a situational entity, defined by intervening agents through historic records and material traces of their practices and motives for action. Trapananda, the City of the Caesars, Aysén, and the XI Region have existed as an effect of those practices that have defined the geographic entity, not only as a place to be inhabited, but transformed and controlled. In this sense, this has been a history in terms of the power exerted to define what the region is and what the means to control and rule it are. Exploring, fencing, settling, planning, and zoning have been some of these practices of intervention. Conquerors, travelers, surveyors, landlords, agents of colonization, militaries, State planners and technocrats have been some of the actors defining a territory as an object of intervention. For these groups, the region not only entailed concrete motives for action, but they also felt that their intervention was

necessary to 'shape' the region accordingly to these motives. But, what are the hopes and motives of the actors who have settled and dwell in Patagonia?

Aysén has a brief and oscillating history between resilience and integration. The next chapter will take us on an ethnographic journey through this peculiar balance. It will be seen through the life history of a settler and his family and shall answer the question of how people experienced the colonization process, the subsequent attempts of integration to modernity and the arrival of economic activities inserted in global trade networks. Above all it shall lead us to a different, more grassroots view of Patagonia.

Notes

[1] According to the Chilean historian Mateo Martinic, there is some consensus between geographers and historians to locate modern Patagonia as follows: North, on the Chilean side, from the mouth of the Reloncaví gulf, the Reloncaví fjord, the Petrohué River, the Lake of Todos los Santos, all the way the Tronador Mountain. It crosses the Andean mountains to the Argentinean side to the source of the Neuquén River, it follows its course until joining the Limay River and then towards the source of the Negro river. It goes downstream to the Atlantic coast and from there until the Magellan strait, following the coastline until reaching the Pacific Ocean in the mouth of Guafo, the Corcovado Gulf and the mouth of estuary of Reloncaví. Traditionally, Chiloé Island and its inner archipelago is left outside of these limits, as is the case of Tierra del Fuego in the south (see Map 1).

[2] Captain Magellan baptised the strait as *All Saints Strait* based on the date of discovery, November the 1st of 1520. Later, it was named Magellan Strait in honour of its discoverer.

[3] In Annex 3 there is a map based on the work of Martinic that displays the area of dwelling of the main ethnic groups before the process of colonization by the Spanish Crown (see Map 11). The main original people from south to north in the Atlantic side were the Téushenkenk and the Aónikenk, whereas in the Pacific side there were the Veliches in the Island of Chiloé, and the archipelago was inhabited from north to south by Chonos and Kaweskar.

[4] An example of a discursive analysis of the construction of the Patagonian space can be found in the article by Casini (2000).

[5] Mitimaes is the aymara name given to those native groups under the influence of the Incan empire – either Incas or subordinated people - that resettle for political or economic reasons. Dispersed evidence about groups of Incas in the southern Andes was one of the myths that fed the existence of the City of the Caesars during the early colonial times.

[6] An interesting compilation on the historic influence of Chiloé in the southern archipelago can be found in the book *Chiloé y su Influjo en la XI Región,* published by the Instituto de Investigaciones del Patrimonio Territorial in 1988. This work, however, contains, in some of its contemporary chapters, the work of authors that showed an exaggerated enthusiasm for Pinochet's oeuvre for the development of the Region of Aysén. The latter is but the reflection of the times (written under the dictatorship) wherein many academic works had obligatory collaborations (read as interference) by military or pro-regime contributors.

[7] The Republic of Chile declared its independence from the Spanish crown on September 18th of 1810, but the archipelago of Chiloé was the last bastion of the Spanish crown until 1826. Republican troops fought against royalist forces and defeated them in the battles of Pudeto and Bellavista.

[8] There is no consensus among historians and local researchers about the origin of the name Aysén. In 1793, the marine explorer José Moraleda recorded one possible source. According to him, Aysén comes from the veliche language *Achen,* that was used by natives as a synonym of going up-stream in reference to one of its main rivers (González Kappes 1998: 7). It has been mentioned that the name could also be a phonetic distortion when some British explorations recorded the region as the land where the *ice ends* (Martinic 2004: 17).

[9] The information about the demographic growth of Aysén from 1907 until 2002, the last available census (see Table 1 in Annex 3).

[10] The settlement process was not always pacific. Many problems stemmed from the conflictive role of landlords as both estate owners and colonizing agents. One of the most outstanding episodes of the many disputes between large landowners and settlers is documented in the so called War of Chile Chico. In 1918 the Swedish businessman Carlos von Flack managed, through opportunistic manoeuvres, to be granted an estancia in the surroundings of the Buenos Aires Lake. However, most of the land was already occupied by spontaneous settlers, who led by José Antolín Silva, created a self-defensive movement that fought for their land against von Flack and the Chilean police troops (Martinic 2004: 187-192).

[11] The military Government appointed the National Commission for Administrative Reform (CONARA), with the aim of re-organizing the politico-administrative division of Chile. The outcome of this Commission was translated into Law through the decrees 573 and 575 of 1974 that set up the current regionalization. Successive modifications through the decrees Nº 1230 and 1317 of 1975, establish the provincial division and, finally the decree 1289 of 1979 defined the communes (Montecinos 2005: 457).

[12] In year 2007 the political-administrative configuration of Chile was modified through the creation of two new regions: the XV Region of Arica and Parinacota and the XIV Region of Los Ríos. They have been created from the division of the I Region and X Region of Los Lagos respectively. This change came following a long process of actions taken by regional movements and acknowledged by the importance of historic claims and local voices related to territorial organization and identity (see Map 10 in Annex 3).

[13] The two regions mentioned are: VI Region of the Liberator General Bernardo O'Higgins and XI Region of the Captain General Carlos Ibañez del Campo.

[14] *Chicago boys* is the name given to the group of Chilean economists post-graduated in the Chicago School of Business in the late 1960s and 1970s. This was a process that resulted from an exchange program signed between the University of Chicago and the Pontificia Universidad Católica de Chile. They were taught and indoctrinated in the neoliberal ideas by Milton Friedman and his colleagues. The Chicago boys were influential when short after Pinochet military coup they manages to introduce a liberal package of economic reforms known as "the brick" (*el ladrillo*).

[15] The limits dispute of the mid 1970s was centred over the dominium of three small islands; Picton, Nueva and Lenox located in the southern archipelago of Tierra del Fuego. This crisis reached a peak in 1978 when both countries were under military regimes and provoked the massive mobilization of troops and the navy to the southern regions. There is historical evidence that both countries were one step away of waging war, but the mediation of Pope John Paul II gave way to a peaceful solution at the last minute.

[16] The provinces from north to south are: Aisén; Coyhaique, General Carrera, Captain Prat. The communes are the following: Guaitecas, Cisnes, Aysén, Lago Verde, Coyhaique, Río Ibañez, Chile Chico,

Cochrane, Tortel and O"Higgins. This structure was fixed by decrees N° 2867 y 2768, of September of 1979.

[17] This view is clearly stated by Von Chrismar and López, two adherents of the dictator who wrote a justification for Pinochet's role in the construction of the Southern Highway in the book *Chiloé y su Influjo en la XI Región* as mentioned in end note 6.

[18] In a neoliberal economy such as Chile, with a social democratic conglomerate in power since 1990, it is not surprising that there is parallelism and convergences with some of the precepts related to the role of public administration of Great Britain. As Flinders points out, in reference to the reforms of the public sector carried out by the New Labour in Britain: *"The initiatives introduced by Labour governments since 1997 therefore need to be evaluated not in isolation but in the context of several decades of* ***'new public management'****-orientated reforms which were intended to increase efficiency and effectiveness within the public sector. Under the Conservative governments of the 1980s and 1990s there was a concerted effort to roll back the boundaries of the state through privatisation, contracting-out and delegating functions away from ministerial departments"* (Flinders 2005: 216). Notoriously, the influx of ideas about the British New Public Management occurred through the many Chilean professionals working in the public sector and universities that have been granted with scholarships to study Public Management in the London School of Economics and other British universities during the last decade.

[19] The regional population of Aysén amounts to 91.492 inhabitants and represents only 0,6% of the total Chilean population. The regional surface is 108.500 Km^2 and constitute the 14,2% of the Country's surface (Secretaría Regional de Planificación y Cooperación XI Región et al. 2005).

[20] Despite the predominance of economic views, Paasi, has elaborated a different division of approaches to regions according to the treatment given by mainstream geography: i) the pre-scientific view, where region is just a practical and given spatial unit needed for the aggregation of data, but with no particular role; ii) the discipline-centred approach that treats regions as objects or results of the research process, often with formal or functional classification of empirical elements, and; iii) critical approaches that see regions as social constructs and stresses the importance of an historical perspective for understanding them as part of a broader process of regional transformation (Paasi 2002: 804).

[21] Michael Porter, defines *clusters as geographic concentrations of companies and institutions interconnected in a particular field (or sector)* (Porter 1998, quoted by Boisier 2005: 53)

[22] Despite that there are no clear-cut boundaries and history has shown the malleability of the geographic entity called Patagonia, contemporary inhabitants themselves identified it with at least three politico-administrative regions of contemporary Chile: i) The Province of Palena located in the southern side of the X Region of Los Lagos; ii) the XI Region of Aysén, or Northern Patagonia and; iii) Southern Patagonia that corresponds to the XII Region of Magallanes.

[23] Paul Theroux is a French writer that wrote the *Old Patagonian Express*. Francisco Coloane is a Chilean writer who based most of its narrative works in Patagonia. One of his best-known books is *Cape Horn and Other Stories from the End of the World*. Bruce Chatwin was a British anthropologist and writer who wrote the famous book *"In Patagonia*", 1977.

[24] The objectives and structure of this philanthropic organization can be found in its website: http://www.theconservationlandtrust.org.

[25] From north to south they are the follow: Santuario el Cañi, 480 há; Corcovado/Tic-toc. 84.700 há; Fundación Parque Pumalín, 298.800 há; Melimoyu/Isla Magadalena, 15.537 há; Cabo León, 26.445 há; Yendegaia, 38.780 há.

4

Puerto Cisnes:

Histories of resilience and integration

This chapter covers the constitution of a Patagonian coastal town called Puerto Cisnes. Puerto Cisnes is located 220 kilometers south west from the regional Capital Coihayque (see Map 2 in Chapter 1). The settlement process has been ethnographically reconstructed through and around the life histories of an elderly couple - Don Luis and Doña Graciela – as well as their relatives and neighbors. The choice for studying this particular family is given by the rich empirical material they provided to reconstruct the history of the settlement process through three generations. They do not represent individual lives but their histories are entangled in the web of social relations and events that have contributed to the collective constitution of town. I think the career of Don Luis also represents an interesting case to show the way people from Puerto Cisnes was facing the successive rise and decline of economic activities through different livelihoods strategies. Their history as a family may present certain peculiarities but I'm certain it embodies the major changes villagers have faced during a period of nearly 50 years.

The narrative is centered on how the organization of everyday life has changed along with the town's growth and the boom of different economic activities over half a century. It aims to portray the manner in which cattle ranching, timber production, hake and shellfish fisheries, salmon farming and tourism have subsequently taken place as predominant activities according to changing markets and political conditions. But beyond the cyclical features of economic activities, the ethnographic description highlights the settlers' remarkable practices of adaptation as they strive to sustain their livelihoods. In this sense, ordering the history of Puerto Cisnes through the prevailing economic activities is an analytical choice made in order to delve into and reflect upon the changes that take place when faced with shifts in livelihood strategies in the coastal settlements of Patagonia.

In the subsequent chapters the focus is on salmon farming as the empirical object for studying regional processes of social change, but here I will present a larger and richer picture composed of diverse social practices, coexistent economic activities and local power struggles, all of which show the subtle nuances and situate the temporary predominance of salmon farming as the latest, and therefore only the most visible change. In consequence, the richer texture of everyday life demands an extension of the interpretation of region-building processes, through the multiplicity of practices that go

beyond the narrow perspective of the latest regional economic discourse. This larger picture that was in place well before the salmon phenomenon shows a double-sided characteristic that is recurrent in most of the settlement processes of Patagonia. On the one hand, there is the strong resilience and autonomy of its people, which is central to their sense of belonging and, on the other hand, there are constant claims for higher levels of recognition from national authorities and effective economic and territorial integration to the rest of the country. For this reason, I have chosen to organize this chapter around the opposed but complementary concepts of resilience and integration that are central to the settlement process and which are to be found in the local expressions of *aguante* and *integración*.

Integration is a historical claim that demands support for increasing connectivity for all kinds of human settlements - towns, villages, fishing coves, fish farming camps, etc. - with the rest of the region, the nation, and, currently, a demand for a higher level of transnational integration, stimulated by some of the global processes of interconnection. In this sense, a description of the succession of economic activities that have taken place over time, situates salmon farming merely as one of the most recent, and gives us privileged information about the links between the different stages of the modernization project carried out by the Chilean State, the integration to different trade circuits and international markets, and the mechanisms of appropriation, adaptation and resistance deployed by Patagonian settlers.

The concept of resilience is significant to the Patagonian case because the claim for higher levels of integration does not mean an acceptance of subordination or dependency of the local population to the State or market agents. On the contrary, the settlers of Puerto Cisnes and, in general the inhabitants of the Region of Aysén, have developed a multiplicity of skills and strategies to secure their livelihoods over time, making use of resources in a complex environment of harsh geophysical conditions, relatively independent of central authorities. The shared experiences of the all too recent settlement process and geographic isolation have created a strong sense of belonging to the region and a flexible degree of autonomy in relation to the State and markets. Patagonian settlers have adapted their livelihoods to the sudden expansion of economic activities but also resisted to the shocks of unexpected declines and withdraw of external support.

Coupling resilience with integration has a perfect practical rationale for Patagonian settlers because these are concepts that have concrete manifestations in their quotidian lives. Indeed, they are not seen as opposite strategies, but are modulated by a different sense of time, based on a distinctive rhythm of life and captured in a well known Patagonian expression: *el que se apura pierde el tiempo* – which can be roughly translated as "to hurry is to waste time." The latter reflects upon the fact that people in Patagonia have developed social practices and cultural forms that value patience and enduring ways of coping with seasonality, the weather, and geographic isolation. This is not about denying the role of the State in the settlement process throughout the XXth century, but about identifying practices by which settlers face discontinuities and fragmented forms of intervention. The lack of external support and the discontinuities of planned intervention have taught Patagonians to think of complaining as a discursive strategy, to get attention and resources from the State, although they do not subordinate their livelihoods to what they regard as external. Again, a much repeated saying comprises this idea sharply: *güagüa que no llora no mama* – "A baby who does not cry does not get

nursed." In other words, there is a permanent public discourse that clamors for integration but, in everyday life, settlers organize their activities with moderate expectations about the timing and benefits of social intervention and of the sudden booms of different commodities.

Patagonia is a unique case, where the history of regional settlement can be retrieved through the life histories of two or three generations, if we consider that the latest State-led process of exploration and colonization dates from 1903[1]. The actors' exceptional proximity to the historic process of regional settlement offers a rich empirical source, not only for the study of the formation of livelihoods, but to the local processes of State-building and the creation of authority. This empirical proximity to local history also gives us the opportunity to confront centralist and determinist views about the development of the Patagonian region. While following the rise and decline of different commodities such as timber, hake and salmon, we become aware that every activity born out of an economic boom is only a part of broader livelihood strategies. Therefore any overemphasis of its importance may be initially seen as a political discourse for the interests of economic actors, rather than all encompassing social practices. That is what resilience means to people: a life lasting process of learning how to deal with expansive cycles and sudden crises.

Meeting Don Luis and Doña Graciela

I crossed the town square dodging some horses that were grazing the lawn. I was aiming for a house with a big antenna right in the other side of the town hall building. I had been told that the place hosted one of the two local radios and was the only private provider of an internet service known as "the cybercafé"[2]. I was looking for the manager of the cybercafé, Don Luis Ramírez because, according to many villagers, he was a key person to talk to about the history of Puerto Cisnes. Once in the cybercafé, I found a man behind a computer desk. He was grey haired, dark skinned and wore glasses that gave him a severe look. He was probably around 70 but, looked strong and vital. I told him the reason for my visit and wish to interview him. After listening to me quietly, he only assented with a head movement and asked me to wait until his shift ended. I agreed and asked for a computer, in order to spend the remaining hour checking emails. The place was a medium size room with five computers, fitted into very narrow desktops. There was no other service than the internet connection and printing as the cybercafé had no coffee or drinks to offer. There was only one other client and the silence of the room was broken only by the tenuous noise of music broadcasted by the local radio program which came from the room next door. At six o'clock, a girl stepped in and approached Don Luis. He stood up and she took his place after a brief chat. He approached me and in keeping with his sober style, he invited me to have tea – *tomar once*[3] - at his home.

While we walked he explained that the cybercafé and the small local radio belonged to his elder daughter and son-in-law and that he was only the manager. His daughter and husband do not live in Puerto Cisnes, but in

Punta Arenas – the southern most city in Chile. They both are professionals, employed as engineers, who invested in the cybercafé as a way of staying in contact with their hometown and to keep Don Luis busy after his retirement. After a ten minutes walk, we reached a house located one block away from the beach, which, given the hilly topography, had a beautiful view over the bay. Once inside, I was introduced to his wife, Doña Graciela, who after a shy greeting, listened carefully to the details of my visit. They both nodded in assent when I named the town people who had recommended them as good subjects for an interview. She invited me to sit and started setting the table to have *once*. Kitchen, dinning and living room were a single, but spacious, soberly decorated room. After serving us a cup of tea, accompanied by bread and jam, she seated herself on a small couch and turned on the TV. It was time for the daily soap opera. Don Luis lighted a cigarette and began speaking, occasionally interrupted by Doña Graciela's correction of facts and names. She was following both the TV and our talk. That was my first encounter of many to come with the Ramírez family.

Los pioneros: following the footprints of the first settlers

As shown in chapter 3, the colonization of Aysén at the beginning of XXth century, was a slow process composed of different waves of settlers. The combination of people coming from Argentina to work in the large land concessions for cattle ranching, groups of families from Chiloé and other places that were part of spontaneous colonization, resulted in a mosaic of huge estancias – a hinterland in fact, organized around a farmhouse and adjoining buildings - and dispersed family homesteads, dwelling under precarious land tenure schemes. By 1920 there was just one town – Puerto Aysén – and a few settlements with a modest trend of attracting further population. However, as indicated in the previous chapter, we need to sort out at least two different situations during the settlement process: the colonization of the valleys and the coastal and archipelagic settlement. In this chapter I will focus on the latter. The major difference for those settling on the coast was the material means which were adopted to move and dwell in a watery coastal environment, not only due to the lack of roads, but because of the extremely heavy rainfall that can reach 5,000 millimeters, distributed the year round. Doña Graciela Berríos explained why people chose to stay in the coast:

> *People settled at the sea side because, the only way of getting here and around was by water. Everybody, of all ages, knew how to manage boats.*

The following section traces the history of one of the first families of settlers in the coastal area that later became the town of Puerto Cisnes. The narrative is centered on Graciela's parents: Manuel Berríos and Georgina Bórquez. Along with a handful of other families, these first settlers became known as *los pioneros* – the pioneers.

Isla Tortuga

Manuel arrived to the town of Puerto Aysén from Central Chile around 1938. He was an agronomist working as a land surveyor for the Office of Land and Colonization of Aysén; a governmental agency undertaking the process of land regularization for spontaneous settlements. He was on duty traveling around the region when a storm made him seek shelter on a small uninhabited island named *Tortuga* (Turtle Island). He spent some time exploring the place and later, after crosschecking public records and cartography, he made a claim and was granted 1.200 hectares of land on this island. After losing his post due to a change of government, he consulted his young wife, Georgina, about settling on Tortuga. Georgina was born in Puerto Aysén and she was the daughter of one of the first settlers in the region, so she thought that life as a settler was well suited to the family lineage and gave her consent. For her, the option of becoming settlers was better than going back to Central Chile with Manuel, because she did not want to loose contact with her family. But the task of settling on new land in the fjords was monumental. Only one public ship crossed the fjord every three months, so everything was done either by sail boats or rowboats. Progressively, over the course of one year, Manuel managed to haul the necessary material and build a modest house. He spent the whole year preparing the place for the arrival of his young wife and their one year old daughter Graciela. In 1942, the whole family moved to Tortuga. They cleared the forest – *limpiar para hacer campo* – in order to open fields for pastures and bring some animals. Cattle, sheep and potatoes were the basic staples.

There were not more than twelve families dispersed between Magdalena Island and the estuary of the Cisnes River (see Map 2 in Chapter 1). The majority of the people settled on Magdalena Island came from the island of Chiloé and, as time passed, it became clear that they were the most capable at the task of clearing land and farming under the fjord's severe climatic conditions. The rest were families that came from all over Central Chile and their adaptation was rather difficult. Puerto Aguirre, a town of fishermen, was the closest village to the south and, to the north, was Puyuhuapi, which was a more recent settlement. Puyuhuapi was founded in 1934, by a group of Germans, who brought people from Chiloé Island as part of a private colonization project[4]. In either case, it took this young family of settlers no less that one day to reach either town by sailing and up to three days by rowing. When there was a southerly wind, people sailed north and vice versa. All activity was done according to the rhythm of life imposed by the weather.

It is at this point that the history of Georgina, Manuel and their daughter Graciela connect with the foundation of the village, as they played active roles at different moments of its constitution.

Competing names, competing sites: disputes over an emerging town

The crucial issue for the first settlers was having enough provisions to survive a long season of isolation. Most of the supplies were distributed by a State owned cargo ship every three or four months. The same was true for the goods the settlers wanted to sell, mainly cattle and furs. In fact, the scattered family homesteads and the dangerous navigating conditions for big ships approaching the coast, forced settlers to devise extreme strategies in order to secure the exchange. In those first years the cargo ship anchored in the middle of the bay, at the mouth of the Cisnes River and settlers reached it by rowboat, regardless of the weather conditions. A couple of times the ship ran into sandbanks when approaching the river and the crew was forced to wait for the rising tide in order to free it. As a result the commander of the ship became more reluctant to stop in the Cisnes Bay. Manuel was permanently concerned about this issue and began to organize the families that were clustered at the mouth of the Cisnes River. His professional training and steady interest in the improvement of local conditions gave him a leading role among settlers and legitimacy with the authorities in Aysén, who named him *Alcalde de mar* – Sea mayor - an honorary position, but of great importance, because it created a local authority, not only for everything regarding the organization and supervision of maritime traffic but, also to record the relevant facts and events of isolated ports. Manuel applied his land surveying skills to study the area, and given the Cisnes River's tendency to become embanked, he proposed a safer place to moor located two or three kilometers north. In addition, he set up a rudimentary lighthouse near the new place, with materials provided by the navy and delegated the closest settler to be in charge of its operation during the nights when the ship was expected.

The decision to set up a dock in a bay away from the Cisnes River was controversial, especially among the families originally living on the southern side of the river and became the first source of tension among the groups of settlers. There were some in favor of Manuel's proposal to build a dock in the new location with enough depth for mooring, but it was opposed by families who lived on the riverside and were used to rowing out to the ship anchored in the mouth of the Cisnes River. The controversy was settled quickly, because the new dock was efficient, making cargo shipping operations safer and more regular. The spot Manuel chose for building the dock was confirmed by practical use and approved by the navy authorities, thus the neighbors' next step was to build a large shack – *una rancha* - on the beach nearby, which could serve as a shelter while waiting for the ship. People rowed to this shelter hours before the ship arrived, hauling their goods for trade and passing the time together talking, eating and drinking. Manuel named the rustic dock area Puerto Graciela, in honor of President Ibañez's wife, which was also the name of Manuel's own daughter. This improvement of access to the cargo ship was a great step in the process of socialization and perhaps the point where dispersed settlers considered becoming villagers.

The consolidation of Puerto Graciela as the local port encouraged families to build their own shelters in the State-owned area beyond the beach. The place was a dense forest and settlers cleared it to build a series of small refuges, creating a process of concentration. Manuel and other neighbors were concerned by the long term effects of this spontaneous settlement and presented regional authorities with a regulating plan, which included a projection of the settlement as a village laying out some streets, blocks, a central square and a limited number of plots. The regularization process increased the demand for plots of land in the emerging 'town', which was now called Nuevo Reino. By 1950, it was generally accepted that, for practical reasons, the village would grow around the proximity of the dock. Those settlers living on the other side of the river finally accepted the change and some even moved to the village. However, for some years the names of Puerto Graciela and Nuevo Reino were contested, perhaps as a sign of protest from the faction of settlers who at the beginning were against the new location and who insisted on the original name of Puerto Cisnes. As time passed, villagers overcame the dispute by accepting the new location, but maintaining the older name. Finally, in 1953, the regional governor of Aysén, *Intendente* Marchant, signed the act by which Puerto Cisnes was officially recognized as a town. At that time, the village consisted of approximately thirty houses, a post office and one civil officer in charge of registering marriages, births and deaths. Despite his leading role in the constitution of the village, Manuel, Georgina and their daughter Graciela remained on their land in Tortuga. They claimed one plot in Puerto Cisnes and built a shelter – *rancha* – only for when they needed to stay in town. They were not an exception; many settlers remained on their land where they worked and kept houses in the village as secondary residences.

The settlers' livelihoods were based on a few agricultural staples, such as potatoes, peas, broad beans, and other crops. Occasionally, there was also a chance to trade timber and furs. Despite the maritime environment, fishing was seldom practiced and was never for trading, but only for self-provision. The main cash commodity was cattle, but it took many years before they could trade with certain regularity. At the beginning, cattle were shipped once or twice a year, at the end of the summer, and sold in Puerto Montt. The loading was done on boats, where individual animals were secured to the small decks of wooden boats and then lifted to the cargo ship with ropes and pulleys. Later, as the cargo increased, shipping was regularly scheduled and the loading was facilitated by the improvement of the pier. However, in general, there was very limited cargo availability for each settler, the season was still limited to March and April, and the trade conditions were always adverse for the locals.

The catholic mission: Clustering around the church, the school and the orphanage

During the first years of settlement there was no school and therefore Graciela was home schooled by her parents. Later, she joined a handful of children who traveled to Puerto Aysén, once a year, to study in one of the

region's few public schools. Those children who had relatives in Aysén, like in the case of Graciela, stayed with their families, while the rest boarded at the school. During some of the hardest years, the ship never arrived due to bad weather conditions, and children missed the entire school year. Once the village became a nodal point for many families, Manuel asked regional authorities to finance a basic literacy course for the settlers' children. The authorities did not build a school, but accepted to pay a small fee to a settler who could take charge of teaching. The role was assumed by one of the settlers' wives, a young woman who had recently arrived from Central Chile, who had done some formal studies, although she was not a school teacher. She became Puerto Cisnes' first teacher.

However, the biggest step for the fledgling village came in the late 1950s, when members of the Italian congregation, Don Guanella, decided to establish an orphanage in Puerto Cisnes. It was a rather eccentric project, but of decisive consequences for the village's consolidation. Don Guanella was a catholic institution, whose priests were basically concerned with giving orphans and abandoned city children education and care. The idea of building an orphanage and moving some of the children, from Santiago and other big cities, to the precarious and isolated settlement of Puerto Cisnes, was in line with the contemporary view of development that placed great value in the expansion of agrarian frontiers. The priests of Don Guanella and the volunteer Committee of Guanellian Ladies decided that homeless children could be a resource in the settlement process of the newly colonized region of Aysén, in exchange for giving them an opportunity to build a life project as villagers.

A small group of Italian priests leaded by Father Piero Calvi and the Guanellian Ladies volunteer Eugenia Pirzio-Biroli arrived in Puerto Cisnes in 1958, bringing 40 children, a medical practitioner, building materials and enough provisions for a long season. With the help of an architect, a team of carpenters and some villagers, they built a two story orphanage and one parochial primary school, which was open to the community in only 40 days (see Photo 7 in Annex 4). The Orphanage was named *Hogar San Luis de Puerto Cisnes*. Later, they built a wooden church. The new buildings were located in the heart of the village and were equipped with a powerful generator that lit up the dark nights of Puerto Cisnes. The congregation residence of Don Guanella soon became a meeting point for the small community of villagers. The priests exercised their vows of charity by bringing the settlers and especially the village children different items of basic necessity. The most appreciated were shoes and clothes, which were second-hand, were mended by the female villagers and distributed among the people. The material needs of those times are exemplified in the differences between the orphans, who were usually well dressed and fed, and the local children who mostly went barefoot and presented signs of malnutrition. The presence of the school and the benefaction of the priests encouraged settlers from the surroundings to build homesteads in the growing town, in order to grant their children education, clothing and food.

Due to its peculiar configuration, Puerto Cisnes was, at the beginning, a town of women. The usual practice during those years was for women from Isla Magadalena and around the fjord to cross with boat loads of potatoes and vegetables and take care of children who stayed in town during the school terms, while men stayed on their land working, or migrated to Puyuhuapi or Puerto Aguirre in pursuit of different seasonal jobs. Women also created neighborhood ties through active religious practices and social gatherings. One of the leading figures was the Guanellian volunteer Doña Eugenia Pirzio-Biroli who, besides her role at the orphanage, created the local Center of Housewives – *Centros de Madre* – which was a space for regular social meetings of married women, who gathered to do charity work while enjoying informal chatting and gossiping.

> Doña Eugenia Pirzio-Biroli was an Italian woman of aristocratic origin, who after marrying and living in Santiago, joined the volunteer mission of Don Guanella in Puerto Cisnes. Doña Eugenia was known for having a strong character and paternalistic behavior. She soon became a civil leader of the town and, under the military rule, was appointed as mayor in 1982, a post she exercised for almost 20 years. She made constant efforts to make Puerto Cisnes known among the Chilean people. Her strategies were writing notes to the national newspapers, getting aid and funding from international cooperation organizations, and using her influence among the civil and, later, the military authorities[5] to get support for a consecution of different development projects.

In 1964, the priests of the Don Guanella mission decided to open a vocational agrarian school - *escuela agrícola* - in order to offer occupational training to the youth of Puerto Cisnes. The project demanded the recruitment of adequate staff for this aim. Luis Ramírez was a young and unemployed agrarian technician living in Central Chile, when he heard about a job vacancy for a vocational agrarian school in Puerto Cisnes. He had never been in the south before, but accepted the job after discussing the general working conditions with the congregation's representative in Santiago. He set sail from Puerto Montt in 1964, with plenty of enthusiasm, but little knowledge about the place he was headed towards. Two days later, he arrived at the village of Puerto Cisnes. Immediately after landing he realized that the conditions stated by the people in Santiago failed to describe the settlement's truly precarious situation. He arrived at dusk and walked through the muddy village streets, escorted by the priests. People lit their way with a rustic artifact pieced together with a tin can and candles, called *chonchones*, which was also the means to illuminate their homes. Luis recalled his first impression of the village as follows:

> *I confess at the beginning I was shocked. At first sight, I found a group of ranchas that gave me a hint of the people's miserable living conditions. If I had had the chance to go back I would have left the place immediately, but it was too late, the ship had already sailed and the next one was not due for three months. So, I was forced to stay and try.*

Photo 1. Panoramic view of Puerto Cisnes in 1958. At the centre the school building of the Congregation Don Guanella (Source: Municipal Library of Puerto Cisnes).

Photo 2. Village of Puerto Cisnes around 1960 (Source: Municipal Library of Puerto Cisnes).

Photo 3. Group of children in front of the School and Church of Don Guanella, 1961 (Source: Municipal Library of Puerto Cisnes).

Photo 4. Don Luis (first from the left) and group of students from the vocational agrarian school of Puerto Cisnes around 1970 (Source: Municipal Library of Puerto Cisnes)

He stayed at the priest's house and soon realized that the place was also the center of social life:

> *During those first years everything revolved around the Guanellian house. The reasons were simple, but effective: it was at the center of town, people lined up once a month to receive a ration of provisions, and because it was the only place that had electric light, so at night it was illuminated and the obligatory point of encounter for villagers.*

As the weeks passed, Luis felt the hospitality and gratitude of the people and soon became fully committed to the vocational school project. There was a lot of work to do: constructing two new buildings, clearing the forest and transforming it into cultivated fields, adapting textbooks to local conditions, breeding animals, etc. Everything was done by Luis, a couple of teachers, the priests and the students. The group often traveled to different settlers' lands to apply their training in specific agrarian activities. It was a kind of exchange where settlers got a voluntary taskforce for certain duties and students increased their practical skills. During one of these fieldtrips, Don Luis and his students visited Don Manuel's land in Tortuga. His daughter Graciela, now in her 20s, approached the group and invited them for food and hot drinks at their home. It was Graciela and Luis's first encounter.

After finishing her studies in Aysén, Graciela had returned to her parents in Tortuga and helped them with the usual household and agricultural chores. In reference to her daily duties, Graciela explains:

> *In those early days being a female settler meant to be a man and woman at the same time. Besides housekeeping I did wood chopping, herding and milking the cattle, cultivating potatoes and rowing to town for supplies.*

In addition to the domestic activities, she also was in charge of exchanges with the town. She made the trip once a month, by rowboat, which took almost an hour, to get provisions and to sell or trade some products. She usually stopped over at the house of some family friends and spent time with people of her age. That is how she started dating Luis, whom she married in 1966, after a two year engagement called *pololeo*. In town, the couple was taken in by Doña Eugenia for a couple of years, before they claimed back one of the abandoned plots in the village and began to build their own house. They began with a single room and, as the family grew, so did the house. Luis and Graciela raised seven daughters.

During the 1960s the Guanellian mission was the main source of activity in town and its restless members combined teaching, praying, and social services across the archipelago. The priests obtained a variety of resources through social networks that went well beyond the Patagonian region. The priests and Doña Eugenia became the undisputable religious and civil authorities, and despite their paternalistic style, they created strong affective ties with the settlers.

In 1967 another of the town's founding figures returned to Patagonia. The Italian priest, Antonio Ronchi, first appeared in Puerto Cisnes in 1961 with the Guanellian's to support the orphanage and it's educative task, but after a couple of years was sent back to Central Chile, due to differences with the regional bishop. Father Ronchi managed to return and was soon widely known among settlers as *el curita rasca* – the vulgar priest – given his way of being very close to the people. He had a missionary's understanding of religion, based on close contact with the people and took interest, not only of spiritual affairs, but of the material improvement of living conditions. He was an active promoter of small material oeuvres that facilitated daily life in the archipelago. Ronchi' style was that of getting things done by insistently knocking on the doors of entrepreneurs and authorities all across Chile and abroad and trading them to Patagonian people through small works for his collective projects. He not only focused his action in Puerto Cisnes, but wherever there was a concentration of settlers; including temporary fishing camps around the archipelago. One of his most enduring initiatives were the twelve radios he created as a mechanism for reducing isolation. He often clashed with the right wing town leader, Doña Eugenia, and was therefore regarded as a leftist[6].

The State regional authorities acknowledged the educational value of the parochial school project carried out by the priests and incorporated it within the public system, providing texts, materials, enforcing basic programs of study and financing the non-religious staff. In this manner, the parochial primary school of Puerto Cisnes became the public school E-N°6. This change was a financial relief for the priests, however, the political and economic situation of the 1970's made the whole Guanellian project a burden that was difficult to sustain through charity. Compelled by circumstances, the priests decided to shut down the agrarian school and the orphanage in 1973 and only the parish was kept open. Luis worked at the agrarian school until its last day.

The Peasant Cooperative and the sawmill project.

From 1970 onwards, the socialist government of Salvador Allende actively promoted peasant cooperatives as part of the Agrarian Reform. The Region of Aysén was not the object of such structural policies, given the particularities of its recent settlement and because land in Patagonia was, until then, an open access resource available to those who claimed it. Nevertheless, the National Agency for Agrarian Development (INDAP), encouraged the cooperative model of organization in Aysén, but was mainly oriented to productive aims, that could secure the livelihoods of the settlers' families. One of those cooperatives was organized among the small cattle ranchers in the area of Puerto Cisnes and became an important source of local activity for nearly fifteen years.

The direct decline of the cooperative was the international crisis of the early 1980's, which hit Chile's domestic economy hard and, as a consequence, meant that many of the social programs were cut down including the support of organizations and the public supply of goods. In addition, the political context of the time was adverse to cooperative organization. Indeed, peasant cooperatives, workers unions and all kinds of

grassroots organizations were systematically deactivated and repressed since Pinochet's coup in 1973.

Los Kilómetros: the road to organization

Until 1970, the way to town was still by the maritime route. There were no roads, only a rustic path that ran south and up the Cisnes River for about 6 kilometers, connecting the town with different families of settlers. The path was made by villagers through a system of logs, placed side by side on the muddy ground which, given the heavy rainfall year round and the sponge-like composition of the soil – locally known as *mallines* - was the only available material that could give structural solidity to the ground. This rustic road building technology was known as *envaralao* and was predominant in many coastal settlements of Patagonia. *Cisnenses* - people of Puerto Cisnes - named this precarious route *Los kilometros*, meaning the distance in kilometers from town to each sector, where the landmarks (kilometer one, kilometer two, kilometer three… etc.) referred to the successive peasants' homesteads. The *Los Kilometros* road opened inland communication, particularly to the movement of cattle, as well as favoring the intervention of the few State agents in the area, particularly the employees of the Agrarian Development Agency.

The first attempts of INDAP agents to encourage a peasant organization were through annual loans to the smallholders living along *Los Kilometros* and by the riverside. The loans funded the increase of cattle herds, under the guarantee of a fraction of the coming year's new stock. The loans were only granted to those who joined the cooperative. The peasants of *Los Kilometros* were the only settlers who owned land that was level enough for agrarian purposes. The topography of the valley meant that a large part of the properties were formed by steep forests and therefore surface available for farming was rather scarce. As a way of encouraging the formation of pastures by cutting and replacing the forest, INDAP agents proposed to orientate the peasant economy towards timber production. The agents recruited the majority of the peasants located in the lower part of the Cisnes Valley and organized them under a cooperative regime to produce timber. The project required installing and running a sawmill plant, which could be properly stated as the material trigger of the peasants cooperative - Cooperativa Campesina de Cisnes Limitada, COOCACIL. The idea was welcome, given the few cash commodities that Cisnenses could trade, which were mainly restricted to seasonal and low margin sales of cattle shipped to Puerto Montt[7]. Plus, the sawmill initiative coincided with the sudden dismantling of the mission of Don Guanella and the consequent withdrawal of its subsidiary role, an event which in a scarcely monetary economy such as Puerto Cisnes had a heavy impact on everyday life.

In 1973, Luis was unemployed after the closing of the agrarian vocational school, but given his profile and skills, was hired by the COOCACIL to administrate the sawmill plant. INDAP agents endowed the cooperative with credits aimed towards strengthening the organization, buying

equipment, and providing capital for the operation of the sawmill for a couple of years. It was agreed that the loans should be paid back through yearly fees, scheduled on a long term timetable and in tune with sales.

The system set up for Luis was as follows. Cooperative members should fell a number of trees from one season to the next and then move the logs from their fields to the sawmill plant. All the inland movement was done using oxen and hence a trained *yunta* – a pair of oxen – was one of the most valuable assets. The timber species were all native, mainly Tepa, Coigue and Mañio[8]. Each working activity fulfilled by peasants - cutting, moving and selling – granted them a salary according to a rate proportional to the cubic inches of wood they provided as input to the sawmill. At the sawmill plant, the timber was processed in pieces of rough timber, because it was mainly made into construction beams. Later, Luis incorporated some technology that allowed the production of dimensioned pieces. At the sawmill plant, Don Luis secured a salary for over forty people: in addition to 30 cooperative members, he employed twelve to fifteen permanent workers from town. But at the peak of activity, he estimated that approximately seventy families – half of the town - received direct or indirect benefits from the sawmill plant. Doubtless, with the exception of a few public officers, the timber cooperative was the main activity offering wage labor in Puerto Cisnes, and therefore had great impact on the local economy. The sawmill plant was first located on km four of the property of one of the peasants, which made it possible for Don Luis and most of the employees to travel there daily by horse. Later, as the activity increased, the sawmill plant was moved to the kilometer six, which given the difficulties of the logged road and the severe climatic conditions obliged them to build a camp and stay during the week, returning home only on weekends.

In town, Doña Graciela and the other women were in charge of household affairs, taking care of the children, trading goods, and producing some basic staples in their gardens. Women also had an important role in pressing regional authorities for different basic public services. Lead by the Italian mayor Doña Eugenia, they built a town hall, a public library, and a small health service. The Mayor also built an air field two kilometers away from the village and, although there were no regular flights it increased the connectivity, particularly for the arrival of authorities and for emergencies[9]. The village had a police office and one local radio directed by Father Ronchi. The electric generator of the Guanellian mission was replaced by a bigger one, operated and subsidized by the National Company of Electricity providing household electricity only for a couple of hours at night. Drinking water was pipelined from an uphill stream to a small processing tank and then to different public taps in town. There was no household supply of water and therefore women had to haul it home from these different supply points. There was one modest, private store for basic supplies, but most of the food provisions, basic clothes and work equipment were brought and sold by the State owned Empresa Central de Abastecimiento (ECA) – Central Supply Company. In the 1970s, all cargo and passenger movements were still done by ship, but the frequency increased to twice a month.

Until 1980 timber was transported on the river. This implied moving the beams by carts to a large storage yard down the Cisnes River and later shipping them on barges to be sold in Aysén. 1980 was a turning point, because of the construction of the Austral Highway; actually a narrow gravel road (see Chapter Three), that reached the proximity of Puerto Cisnes. The road was a major milestone for town, because the long promise of terrestrial connection seemed closer, and during the first years, had an effect in the creation of some temporary jobs. But not everything about the highway was good news. Despite the constant clamor of the people of Puerto Cisnes, the design of the main road did not include passing through or near the village, but 30 kilometers inland. For settlers, being excluded from the main road unleashed frustration and disappointment. As compensation, the road building company opened a secondary way covering these 30 kilometers to the main road, using the same route of *Los Kilometros*. In 1982, Puerto Cisnes was finally connected by land to Coihayque, all of which favored the cooperative activity. Once the gravel road was finished, the cooperative broadened the area of production and extended its influence to the kilometer 50. The timber produced by the cooperative supplied some of the road construction needs as well as the material necessary to build some of the villages along the road side, such as Villa Santa Lucía and Villa Amenguales. With the new road, the timber was transported by truck and sold in the regional capital of Coihayque. The main buyer was the State Service of Social Housing – *Servicio de Vivienda y Urbanismo* - that used the timber in housing programs throughout the region. The cooperative also broadened the scope of its funding and got resources to improve the production process. Money for new machinery came from different sources of the international cooperation, including some of Father Ronchi's contacts.

Given the authoritarian political context, the performance of COOCACIL was under permanent scrutiny and its survival required continuous justification. The role of the town's Mayor, Eugenia Pirzio-Biroli, in defending the cooperative was crucial. She was appointed by the militaries and throughout the dictatorship created close links with Pinochet and the regional military governors, which gave her some room to maneuver support for the cooperative and obtained other privileges for the town. However, in 1984, given the serious international economic crisis, the Service of Social Housing of the Region of Aysén and the local Municipality of Puerto Cisnes stopped purchasing timber from the cooperative. Luis managed to sustain the cooperative for sometime, mainly thanks to sporadic sales to the road construction company, its savings and assets, and the political protection of Doña Eugenia. Nonetheless, in 1985, the cooperative's situation was critical; the sales were reduced to nothing, the savings were gone, the debt increased and the governmental support withdrew. The cooperative reduced its capacity to the point of sustaining the salaries of fifteen people between members and workers. Don Luis flew once a month to Coihayque to obtain payments from customers, and to manage savings and debts with the banks. At the end of the month, at times when there was no cash for the payment of salaries, Luis obtained credit

among the local stores to acquire the basic supplies needed for his workers. Finally in 1985, the timber cooperative closed. At this same time, some of his people had already left the sawmill plant to try their first hand in an emergent activity that was spreading throughout the archipelago: the southern hake fisheries.

Learning to fish: the boom of the southern hake

People from Cisnes did not practice fishery on a significant scale. The few families who were in the habit of fishing practiced it from the shore, as an activity for self provision. The species were those that are usual to benthic fishery, such as Patagonian blenny (robalo), mackerel (jurel), barracuda (sierra)[10], and eventually trout (see Chapter 5). This lack of interest in fishing seems rather unusual for a coastal town, but the reasons may be found in two aspects: the heterogeneous composition of its settlers, who came from different places and had no particular fishing skills, with the exception of those families coming from Chiloé and the lack of markets for fish products, given the isolated conditions of the archipelago and the perishable nature of fish. Domestic prices were not sufficiently attractive to invest in costly cooling systems for transport or industrial infrastructure. However, in the early 1980s there was a first wave of activity related to shellfish fisheries, mainly mussels, sea urchins and clams, that began thanks to trawlers coming from the northern province of Calbuco. The presence of trawlers exploring the fishing potential of the archipelago created an outburst of medium size buyers and middlemen. This wave of buyers created a seafood market with a minimum investment in cooling and transport but able to trigger a double effect: firstly, a wave of shellfish divers coming from the northern regions, who spread seasonal camps along the archipelago; and, secondly, some of the villagers of Puerto Cisnes' become engaged in shellfish fisheries. The shellfish boom attracted some off-region entrepreneurs and triggered a number of medium size initiatives, such as canning plants for exports, that aimed to take advantage of the increasing trade liberalization imposed in the late 1970s by the military regime. However, the high costs of energy and transport crushed most of these projects after one or two seasons.

Around 1984, there was a second wave of fisheries, this time triggered by the increasing interest in Southern Hake – *Merluza Austral (Merluccius australis)*. This specie was presenting interesting export prices, particularly as a frozen commodity, destined to the wholesale fish market of Madrid – Mercamadrid – in Spain. The rise of Chilean fisheries might be understood in the frame of a policy change to trade liberalization that situated agricultural and seafood commodities as one of the pillars of the economy. The turn to agro and seafood exports was accompanied in the early 1980's by the neoliberal withdrawal of the State from the economy, the privatization of most of the basic service companies, which entailed rising fees paid by citizens, and a minimal social policy of subsidies to aid the most vulnerable families (Nef 2003).

The arrival pattern of hake fishery to the region was similar to that of the shellfish boom; trawlers coming from the northern provinces of Puerto Montt and Valdivia made successful exploratory fishing of this demersal species[11] and triggered a stampede of small boats that populated the archipelago with seasonal fishermen from all over Chile. The hake catch required techniques and skills unknown to the people of Puerto

Cisnes which, however, were soon acquired through technical courses by some of the fish brokers and trawler owners who were interested in creating links with a small scale fishermen fleet capable of providing a sustained supply of fish. As one of the first local fishermen puts it:

> *Before the fishing boom, the people of Cisnes caught hake unintentionally, but didn't eat it because it was unknown, but when Mr. Pacheco arrived from Puerto Montt he opened our eyes. He taught us how to fish for hake. It was a technique called espiche, not the espineles we use now…it was a tube, filled with plumb and a large hook…and with this system we caught a lot of fish, especially when we used mackerel as bait, because it's oilier… then buyers came and the folks opened their eyes, that was around 1984. The first broker who arrived was a Spaniard, a guy in a trawler called Lemuy, who had worked before in Chiloé. He came with the first espineles which was a much better technique and the catches increased…Before we knew nothing and had no idea of how to fish for hake, and now you find it's easy, everybody wants to be a fisherman, because the techniques are known. I usually told the newcomers that we had to invent everything.*

The gathering of hake fishermen in the archipelago caused by the presence of trawlers/buyers converged in the formation of different fishing camps around the Toto Islands in the late 1980s. This gave pace to a spontaneous settlement process whose nodal point was baptized as Puerto Gala. People sorted themselves out in different coves, according to their place of origin and founded improvised camps made of nylon tents. Through time, the camps around the Toto Islands became known according to the city of origin of their fishermen: Caleta Valdivia, Caleta Puerto Montt, Caleta Puyuhuapi and so on. The same settlement process occurred around other areas of the archipelago. Usually, during this period, every new settlement was originated by a group of fishermen coming from outside the region and associated to *faenas* supported by different fish broker's companies. Most brokers were medium size entrepreneurs coming from northern regions and owning two or three trawlers. In this manner, the nylon towns became a point of reference and the dwelling place for a floating population, which during the peak of activity around 1990, reached 5,000 people. The increasing activity around these camps and the arrival of women and traders transformed many of these places into emerging towns, the most enduring of which were Puerto Gala and Puerto Gaviota[12] (see Map 2 in Chapter 1).

The nylon towns

After the closing of the sawmill plant in 1985, Don Luis was unemployed for some time. As had happened before with the closing of the vocational school, he spent the time bettering his carpentry skills by fixing and improving his house. As for many settlers, it was an extremely hard time given that domestic prices of cattle went down and the only wages were from temporary jobs created for the construction of the Austral highway. Luis and Graciela's family had grown to include seven daughters and the eldest was a freshman at the university in the northern city of Concepción. She was the first person born in town to study at the university. In those difficult times, the only social buffer to the crisis was the solidarity among neighbors, the increase of bartering, and a local system of credit in the food stores known as *fiado*[13]. The only livelihood showing an increasing activity

and bringing in any money was the hake fishery. The town received a wave of new settlers who came from northern cities, to participate in the hake fishery boom. The first settlers of Puerto Cisnes, mainly peasants and woodcutters, descendants of *los pioneros,* looked upon these newcomers with distrust. But the high income generated by fishing in short seasons attracted the local youngsters and those who were in need of securing a livelihood.

The fishing activity was organized around *faenas*, - fishing campaigns - which in general terms were informal agreements between a fish broker or entrepreneur and a group of local fishermen through which they set the period of fishing and the general conditions of trade. Thus a group of fishermen secure a buyer and fish brokers a share of the catch. The agreement for a *faena* normally entailed the specific time to be spent fishing and the supplies needed to fish for that period. Everything was scheduled around the trawlers sent by the broker to receive the fishermen's catch and transport it elsewhere to be processed. Thus, local boats and trawlers' crews set out to fish, knowing in advance when the trawlers or trucks sent by the middlemen would come to buy the fish. In most cases, the deal included the broker's trawler towing the group of small boats off-shore and provided fishermen with the bait.

Don Luis was turning 46 and had never fished before, but compelled by the difficult economic circumstances and convinced by a neighbor who had a boat, he began participating in some fishing campaigns. They had a small boat, without an engine so, as most of the locals during the first seasons, the work was done by rowing. The first campaigns were in the Canal Puyuhuapi that ran across Puerto Cisnes, and the east side of Magdalena Island. However, the fishermen soon realized that the best catch was located in Canal Moraleda, which had more open waters, requiring larger boats and longer working periods (see Map 2 in Chapter 1). The campaigns lasted between ten days and up to three weeks, therefore, besides the fishing equipment, the logistics included calculated organization needed to dwell in the archipelago. A boat crew was formed by two or three men who had to live in precarious camps on some of the islands of the archipelago. The displacement of the hake to Canal Moraleda and the inner parts of the archipelago triggered a number of fishing camps upon different islands and coves, which were known as "nylon towns" - *pueblos de plástico*. Don Luis and his partner worked for a fish broker whose camps were set in a group of islands called Toto, six hours away from Puerto Cisnes (see Map 2 in Chapter 1). Isla Toto concentrated great part of the hake fishery activity through different fishing camps and coves offering good shelter.

The camp building procedure could take a couple of days and was as follows: Don Luis and his crew choose level and solid ground – a combination that is hard to come by on those steep rocky islands - and would tie some branches together, forming the structure of a tent. The structure was covered with thick nylon and then tied with ropes. They then fitted together some pieces of wood to make a surface for a floor in order to keep their effects and blankets off the ground. The second step was gathering wood to light a fire – *fogón*. That was a complex task since,

although timber was abundant, the heavy rainfall made it difficult to burn. The solution was to use the wood of a native tree called *tepú*, whose peculiarity is that it will burn while still green and generates high caloric power. The *fogón* was improvised with an oil barrel cut in half that helped give protection from the wind and could also be used as a stove.

The fishing routine for Don Luis and his crew started at 10 am and ended at 9 in the evening, when they came back to the main cove to deliver the catch. In the good days they caught up to one ton of hake, which meant that a five meter boat had a full load. Fishing at that capacity required good weather conditions, otherwise the waves could easily capsize a full boat. Their catch was delivered daily to a trawler that was moored in Puerto Gala and belonged to the broker in charge of the *faena*. The catch was weighed and recorded in a book. In some cases the payment was handed over daily, in others at the end of the campaign. Once the trawlers working for one company were full they set off to deliver the fish to processing plants, located either north in Chiloé or south in Puerto Chacabuco. The campaign ended when the trawlers returned after meeting the quota fixed by the broker. The return for the small scale fishing fleet was at the mercy of weather conditions. Many times Don Luis and his crew were forced to stay in the camps longer than planned, while they waited for better navigation conditions.

At the beginning, life in Toto was extremely rudimentary, there were no facilities other than the makeshift tents and a rustic wharf, built to receive the catch. Don Luis remembers his first campaigns as follows:

> *The men were usually drunk and the only accidents that occurred were related to the excess of alcohol. Many of them came from all over the country and not a few were said to be running from the law. Drinking and fishing were the only activities, and fishing was only a means to continue drinking. The provision of alcohol, cigarettes, instant coffee and sugar was the trawler crew's business. They did excellent business, charging double due to the isolation.*

Don Luis worked the summer season of 1987, saving money for the educational expenses of his eldest daughter. He built his own boat, but could not afford an outboard motor, which was indispensable piece equipment in order to compete in the next fishing season. However, Don Luis was recruited to assume a new function in the buoyant hake fishery business. Don Luis' education and the skills acquired while administrating the cooperative made him known as a reliable person among the fish entrepreneurs and he was soon hired to be in charge of receiving the catch for a company in a place called Islas Bajas. The job consisted in receiving the fish for a regional entrepreneur on a pontoon fixed to a rocky island in the middle of the archipelago. The salary was lower than what he could earn as a fisherman and the obligations included being away of his family for long seasons, but the prospect of a secure monthly income made him accept. The structure was a single dorm and one storage room that was cooled through fresh ice brought in by the trawlers. He had two assistants to unload the catch and store it in boxes packed with ice. Their daily routine

> for about one year period began at five in the morning, distributing the daily quota of gasoline to the small scale fishermen. At dusk, they received the catch, weighed it, registered it and put it on ice to be dispatched the next day on the trawlers that came to pick it up. He also organized the payment with a voucher system, which were paid weekly in cash.

The hake fishing boom lasted until 1990, when the catch dropped dramatically. During the 1980s the sum of the artisanal and industrial catch of southern hake registered a rising, annual average of about 40.000 tons. Then, in 1988, after a peak of 70.000 tons, the annual catch dropped to a minimum of 20.000 tons in 1993 (Peña Torres et al. 2005: 11). The fishermen were aware of the threat of depletion, as one of the side effects of the lack of self regulation and the liberal fishing policy, labeled as Open Access Principle[14]. But the drop of the hake catch was also partly associated to the increasing presence of factory boats, which entered the fjords illegally under the cover of night. The law established an exclusion zone, of five miles from shore, for the practice of small scale fishery, but there was not enough State supervision to enforce it and, therefore, in practice it did not stop the entrance of the industrial fleet. Upon this scenario, of increasing pressure on fish resources, the State agencies related to fishery decided to intervene. Thus, after conducting research for the assessment of the stock, the government set up a seasonal ban, during the month of August to protect hake reproduction and later, in 1992, established a catch quota system for the hake fishery which divided the permissible annual catch among the industrial and small scale fishermen that were officially inscribed in a National Record of Fishermen. These changes restricted the access to the hake fishery and created a self-regulatory system of management, based on *de facto* Individual Non-transferable Rights (Peña Torres 2002: 193).

As a consequence, the new regulatory frame created a closed national system of small-scale fishermen with fish quotas based on historic records of catch which were co-supervised by a technical organ appointed by the State and fishermen unions with the power to exclude possible free-riders. In other words, the hake fishery regulations froze the growth of the small-scale fishermen. In Puerto Cisnes, these changes concentrated the process of catch control, as well as the power of negotiation with fish brokers, in the hands of the fishermen union leaders. In the long run, discrepancies in terms of management and charismatic leadership fragmented the fishermen representation into seven different unions. The regularization process also engenders a slow process of regional identification with the fishing activity that was inexistent before the hake boom.

La carretera: the promises brought by the road

In the 1980s the town of Puerto Cisnes went through a change. The population rose to 2,000 inhabitants, impelled by the immigrant waves of fishermen and the connection to the Austral highway in 1982. These men, who initially settled in the fishing camps along the archipelago, brought their women and began rearing children. These new families were in need of schools and other social services, so a great number of them traded the precarious conditions of the islands and moved to the mainland, to Puerto Cisnes. The active leadership of the mayor, Eugenia Pirzio-Biroli and the 30 kilometers of dirt road that connected the town with the Austral highway, made Cisnes the most important

settlement in a radius of 300 kilometers halfway the regional capital Coihayque to the south and the northern city of Chaitén. Despite the advantage of a terrestrial connectivity, reaching the capital of Coihayque took no less than seven hours on one of the two small buses providing the service. Yet most of the cargo movement was by sea, and dependent on the weekly ferry boat. The ferry, named *Barcaza Alejandrina,* passed every Tuesday to Puerto Chacabuco in the south and returned Fridays, on its way to the northern city of Puerto Montt.

The highway opened opportunities for tourism, which although highly seasonal, indeed reduced to January and February, demanded the creation of new services. Thus, for the first time there were a pair of small family hostels and one restaurant. The first waves of tourists were Chilean families and backpackers, who traveled the Austral Highway as an outdoor adventure. In general, it was low budget tourism.

Salmon farming came to town

As with hake fishery, salmon farming in southern Chile was an economic and socio-technical phenomenon that boomed within the framework of neoliberal policies and promotion of export-oriented activities that have driven the Chilean economy since the 1980s. After some State led experimental attempts that will be described in the next Chapter, the private sector entered salmon farming in 1979, when the Chilean company Mares Australes, in association with the Japanese Nichiro-Chile, began a farm of Pacific salmon on the Pescado River in the Region of Los Lagos. Another nine companies began their operations between 1983 and 1984. Up to 1985, the fish farming attempts were on a low scale and located in the Xth Region of Los Lagos, particularly in the inner seas of Chiloé Island and the bay of Puerto Montt. However, the second half of the decade brought a consolidation phase for exports of farmed salmon and trout, and the emergent companies began a race to obtain aquaculture concessions. Within this strategy they targeted the isolated archipelago and fjords of the XI Region of Aysén, where the industry planned to expand production sites. The first companies in the Region of Aysén arrived between 1989 and 1990. They followed basically the same strategy: choosing sea sites near towns, connected by the recently opened highway, that could serve as logistic bases and provided wage labour. The chosen towns were Puerto Chacabuco, Puyuhuapi and Puerto Cisnes which, consequently, became three nodal points of the emergent Patagonian salmon farming industry (see Map 2 in Chapter 1).

The salmon ferryboat

> Don Luis traveled home from his post in Islas Bajas only once every three months. On one of his days off, during the spring of 1989, he was contacted by one of his neighbors who asked him to be the pilot for a group of fish farming entrepreneurs coming from Santiago, who wanted a daily boat tour around the fjord. They were after suitable sites to run a salmon farming business in the surroundings of Puerto Cisnes. As a result of this daily tour, the entrepreneurs ran an experimental farm in the area during one year and, given the positive results, decided to upscale the operations to commercial size. Don Luis was offered a new job within the

salmon farming company. They needed a skipper for the new ferryboat through which most of the company's field operations would be carried out. The ferry – *barcaza* - was a middle size boat, but had a considerable cargo capacity and relied on a hydraulic arm as its main working equipment. As with his previous jobs, Don Luis did not know how to pilot a large boat, but the entrepreneur, who had probably heard about Don Luis' personal qualities, persuaded and encouraged him to accept the post.

GrandSalmon[15] was the first fish farming company in the area and people looked upon it with distrust. The villagers knew nothing about this activity, but gradually, the rush of the startup, the new arrivals, the appearance of new boats and corporate trucks, the transporting of supplies and equipment, the cages along the fjord, and even the increasing presence of escaped salmon in the fishermen's catch, made fish farming a concrete reality, that slowly involved most of the villagers who were not into the fishery business. Indeed, as the months passed, all the unskilled labor contracted for GrandSalmon were people from Puerto Cisnes, whereas the managers and administrative staff came from the northern regions. The fish farming supplies came, either on ferries or by trucks from Coihayque. In this sense, the highway was a step forward, making the company's logistics feasible, regardless of the weather.

Don Luis quickly learnt how to pilot the ferryboat, which was baptized as *Doña Quina*, in honor of his mother-in-law Georgina[16]. In the beginning, he and his assistant were in charge of all off-shore transport: moving workers, carrying supplies, as well as the crucial process of fish seeding and harvesting. Indeed, his true initiation as a ferry pilot, was the first harvest on the fish farm at Tortuga, which according to the records, was the first harvest in the area surrounding Puerto Cisnes.

This first fish harvest of 1990 was remarkable. First, they unloaded a full shipment of ice brought by truck from the city of Coihayque, six hours away, and immediately carried it on their shoulders to the ferry and then to the fish farm – *centro de cultivo*. The harvest taskforce was a team of about 15 people apart of the normal farm staff. Harvesting took place after sunset, because the temperature drops, making the fish quieter and reducing the effect of decomposition by heat. Next, they pulled out the net and started to catch fish. One part of the team knocked the fish out with sticks, others sliced the gills and placed them in a bin where they bled to death and a third team packed slaughtered fish into styrofoam boxes filled with ice. Once they completed 200 boxes, the ferryboat went to Puerto Cisnes and loaded a truck that immediately set off to Puerto Chacabuco, where they were processed by a hake export industry, whose services were subcontracted for the purpose. The ferryboat went back and forth, up to four times and people worked at the farm until 4 in the morning. They harvested 160 tons of Pacific salmon, far more than the managers' initial projections. Don Luis commented on this experience as follows:

> *Everything about harvesting was subject to minute by minute experimentation, as well as the results that came out next day. Workers and managers were eager to know*

what had happened with the fish harvested the night before. Chacabuco was six to seven hours away by truck and the road was awful. Of course, it turned out that the quality wasn't good. The fish were full of bruises and scaleless, because of the intensive manipulation. Although, regardless of the quality issue, that was due to inexperience, the results were good for the company.

From the success of this single fish farm at Tortuga, the company decided to invest on a large scale in a series of facilities that could serve the operation of many farms. First, a large hatchery in Magdalena Island, and later, two workers camps covering the different areas of production. All the chosen sites were isolated spots within the fjord, without any docks, roads, electricity and other basic services. So building facilities under these conditions required a heavy investment in material and personnel.

Most of the production activity was organized around securing supplies for the fish farms. The most demanding of these duties was the movement of fishmeal, which for a long time was done mainly by a taskforce of 30 men that unloaded and loaded up to 14 tons of sacks for each farm by hauling the bags on their shoulders. In addition, each farm had a permanent crew of about 14 men in charge of fish care, in particular for the time consuming labor of manual feeding. In sum, at the peak of activity during the first years of the 1990s, the company' workforce rose to 300 people. Most of the maritime transport required for this gigantic task was done by Don Luis and "Doña Quina". Regardless of the weather conditions, his assignments required a daily transit between the headquarters at Puerto Cisnes and the fish farms and workers camps spread across the fjord. Don Luis became acquainted with the managers and crews of different sites and the sight of Doña Quina became a synonym for supplies and visitors. Also, the majority of workers and managers were under 30 years of age and, hence, Don Luis, in his 50s, stood out, because of the authority achieved by practical experience.

The first big crisis for the company came in 1997 and was triggered by a virulent disease outbreak. The farmed salmon yields increased from 160 tons in 1990 to 5,000 in 1996. However, the general breeding system consisted in high densities of fish per farm and health management was not sufficiently strict in controlling the incoming biological material, boats and equipment. As a consequence, the GrandSalmon farms around Puerto Cisnes became contaminated with a virus that stemmed from an outburst in fish farms in Chiloé, causing high mortality and obliging the company to bury approximately 90% of the fish. But, as usual, the crisis had more than one side to it. The other was overfeeding, which caused not only heavy economic losses, but eutrophication of the immediate fish environment. Don Luis was a privileged witness of a series of mismanagement practices when, as part of his duties as skipper, he participated in the periodic task of changing fish nets at the farms. As a true black box, the raised nets revealed the overfeeding in the form of massive deposits of rotten fishmeal on the bottom, which hindered the normal circulation of water and increased the contamination. In some cases the net changes revealed entire sacks of food, tossed by workers who wanted to fulfill the daily feed quota as quickly as

possible. Don Luis not only foresaw this crisis of the increasing mismanagement at the farms, but also linked it to the strict production goals imposed by the managers. Nevertheless, the advice and warnings coming from medium ranked personnel were not listened to. He perceived that the initial commitment to the common enterprise of farming fish was giving way to a managerial system, centered on the technical projection of higher yields that did not take into account the workers opinions based on experience.

In addition to the local crisis, the global prices of farmed salmon dropped at the end of the 1990s and the whole Chilean industry suffered from the international turmoil of markets. The adjustment not only included internal aspects of management and external conditions affecting prices, but faced increasing pressures from international consumers and environmental groups concerned with the overall production conditions.

In Puerto Cisnes, the crisis provoked a re-engineering of the company that started with a complete change of the top manager positions. The company employed professionals who had backgrounds in the agro-food industry, specifically from broiler production (see also Chapter Seven). Some of the immediate changes in farming practices that were introduced by the new management team entailed the use of vaccines and tight health and sanitary control. Mechanization increased and the feeding process was rationalized. A strict system of shifts was imposed which obliged workers to remain in the camps for up to fourteen days. But the big change came in 1999, when the company began massive outsourcing of all those activities not directly related to the main production process. The outsourcing entailed a wide range of services that had previously been internalized, such as diving, night watching, the replacement of nets, the transport and handling of supplies, the transport of workers, etc. These changes meant a slow, but sustained replacement of the local workers with non-local personnel. Many of the local workers simply did not stand for the new labor conditions. According to Don Luis, all these changes deepened a generalized sense of disaffection with the activity that hurt the initial good relations between local workers and the company:

> *The first managers convinced us that this new activity [salmon farming], was a common project. They promised us that with the growth of the company things would be better for everybody. The benefits would be shared. But, after the turmoil and the arrival of the new administration, those principles were put aside and the beginners, workers and medium ranked personnel stopped feeling the same commitment. At the beginning, everything was new and there was a firm motivation to move forward. We were proud of the results and everybody wanted to do better. But later, after the changes, everybody worked according to the rules. The affection developed for the activity and the people you worked with disappeared. The company blamed the lack of professionalism on "those unruly fishermen". It is true that Patagonians are in no rush to do anything, but is also certain that we did everything that needed to be done for the Company. What now counts for the company are the efficiency parameters set up by the bosses, and given that the benefits were not clear anymore, the people from Cisnes lost interest in fish farming. The idea of a common project was gone.*

Given the outsourcing process, GrandSalmon not only gradually reduced personnel, but also its assets, which among other goods implied the sale of the ferryboat "Doña Quina". Don Luis tried to convince the new managers about the usefulness of keeping the ferry, but the response was in line with the new direction of the company. The outsourcing rationale demanded a strict focus on the core of the salmon business, that is the production of fish meat and the upkeep of a boat had no place in this scheme. He was fired in 2003 at the age of 63. Don Luis was one of many locals affected by the outsourcing process. In 2004, the share of native workers from Puerto Cisnes became reduced to 42 from a peak in the early 1990s of nearly 200.

Epilogue: A 50 years old town

In the wake of salmon farming, the population of Puerto Cisnes rose to over 3,000 inhabitants. In the year 2003, the town celebrated 50 years of its official existence. Most of its streets had been paved; the dock was now a solid concrete structure, and the town square hosted most of the public buildings. Puerto Cisnes relied upon a small hospital, a public library, a primary court of justice, a fire brigade, a police station and a municipal building, which hosted most of the State agencies for social services. Electricity, drinking water and gas were provided by private companies. However, two thirds of the households received subsidies from social programs which reduced the fees of basic services. State and municipal led programs for social housing also led the construction of a new neighborhood of fifty basic houses.

The claim for integration into the nation is still called for by the locals, but they acknowledge that connectivity has increased in various forms: the terrestrial transport to the capital city still takes 6 to 7 hours, but there are more than six buses that belong to small local entrepreneurs serving a daily route to Coihayque and, once every two days, to the northern locality of La Junta. There were two local radio stations belonging to each of the main churches: Catholic and Pentecostal. There was a land based telephone service, although few families hired it and at least one mobile phone company had an available network. One of the most recent phenomena was that one third of the families have contracted satellite TV.

Despite the cyclical expansions and setbacks, by 2004 all the main economic activities practiced in town throughout fifty years still coexisted, although local people regard fishery and fish farming as the most significant, in terms of income. There were two fish farming companies whose headquarters were located in town, as well as the local port, provided a logistic base for another three companies. There were seven different fishermen unions representing 265 people registered in the hake fishery. Tourism infrastructure was rising and progressively becoming more specialized and oriented towards the service of foreign visitors who practice fly fishing.

Photo 5. View of Puerto Cisnes from the Bay in 1961 (Source: Municipal Library of Puerto Cisnes)

Photo 6. View of Puerto Cisnes from the Bay in 2005 (Source: Municipal Library of Puerto Cisnes).

In the aftermath of his salmon farming career, Don Luis spent his time in charge of the internet access owned by his older daughter. This new activity not only presented to him the challenge of learning how to use the latest information technologies but also put him in contact with many children of the new generation for whom he was a complete stranger. He concluded that having been off-shore for twelve years working in salmon farming created a void in his social life, which may be not a problem for an old man but dramatic for the young workers. Of his seven daughters, only the youngest was still in town, working as a teacher in the local school. Doña Graciela, his wife, helped rear the grandchildren.

Time and rhythm in the creation of livelihoods

The economic history of Puerto Cisnes, narrated through the livelihoods of its settlers, offers us empirical grounds for understanding the central concepts of this chapter: that of resilience and integration. Resilience is not a latent state that folds the recovery capacities of a person or a human group, but the life long process of active learning and the deployment of tactics and strategies to face abrupt changes and crisis while increasing or at least maintaining the abilities to make a living. It means that people learn how to deal with different economic cycles, mastering and trading different commodities, and engaging in different networks. Also, and more importantly they do so by modulating most of the discontinuities and ruptures through the continuities offered by a set of non-commoditized relations that are cultivated in the particular rhythm and timing of everyday life. Thus, livelihoods are shaped upon a long term experiential process of inhabiting and dwelling in the Patagonian environment. It is through this process that people acquire the necessary skills and create enduring social relations to adapt and transform the living conditions in ways that are specific to sites and groups. The crisis and changes that marked economic cycles, at the ground level, might be represented, by those who are affected by a rupture, a break, as a difficult time in life, but does not stop the *"streams of activities – looking, listening, feeling, scrutinizing, checking – that yield meaningful information and shapes our experience of a world full of significances"* (Reed 1996: 30). The enduring practices that allow us to keep going are rooted in the abilities of detecting information from our environment and making creative use of it, by establishing permanent or temporary associations, not only with other human beings, but also with non-humans objects. For instance, Don Luis' career in salmon farming cannot be dissociated from the ferryboat "Doña Quina". For him and his workmates it is this man-machine association that marked a collective experience of salmon farming, to the point of expressing affection and nostalgia for the old boat.

Fish farming, understood as an economic activity and a social practice, is only the latest resource available for the local population, doubtless one in which expansive dynamism implies accelerating changes that include complex socio-technical networks and trans-local effects, such as migrations, new forms of organizing labor, environmental challenges, and cultural clashes. But so did the timber production and the hake fisheries. Despite the contextual and extra-local particularities of each of these processes, they were all internalized and modulated by the situated experience of local actors. Cattle ranching, logging, fishing and fish farming were transformed into practices that were incorporated in meaningful ways to the site-specific understanding of social life and the environment. This is the form by which new activities enter into peoples' lifeworlds.

This appropriation of the alien or the novel element is not a straightforward and smooth process and there are many examples of ambiguities and discrepancies, but they remained as accepted practices insofar as they fulfilled certain principles of local*ness*. All the social changes described in this chapter entailed active efforts to transform the external, the alien, into practices that reflect, at least partially, the local way of coping with things. In other words, this is indeed the work of modulation. People modulated the changes we called economic booms through their particular sense of time and rhythm to create or appropriate the socio-technical networks and transform them into part of the accepted social practices.

For example, the description of the early salmon harvesting in Puerto Cisnes gives us a taste of the dawn of the activity, but, more importantly, lays empirical foundations to situate technological change; first on primary experience and second on shared practices. Indeed, the harvest event narrated by Don Luis, in terms of minute by minute experimentation, is a prime example of how the pragmatist, John Dewey, understood technology. He affirmed that *knowing is indeed a technological artefact*. In his view, knowing is a practical answer of how to go along with things by choosing and testing tools and means when faced with unresolved inquiries:

> *[I]t is a fact of human life that such (pre-reflexive) situations sometimes call for responses that cannot be simultaneously undertaken or that give rise to other incompatibilities. When such conditions arise, when a situation is tense and unresolved, and something is the matter, reflection or cognitional interest becomes its dominant trait…There is a search for a tool with which to operate on the unsettled situation. The tool becomes a part of the active productive skill brought to bear on the situation. The purpose of the tool is to reorganize the experience in some way that will overcome its disparity, its incompatibility, or its inconsistency. A tool is in this sense a theory, a proposal, a recommended method or course of action. It is only a proposal and not a solution per se because it must be tested against the problematic material for the sake of which it has been created or selected* (Hickman 1990: 21 on Dewey's approach to technology).

In this sense, livelihoods are intimately linked to resolving the enquiries set off by the attempts to master the material substrate for making a living and the changing social arrangements that rule the production factors. Thus, livelihoods become a life long creative search for tools and means to earn a living. This is not to say that livelihoods are equivalent to particular labor or economic activity, but are the experiential basis which people draw upon in their daily toil to live in Patagonia or anywhere else for that matter.

The next chapter delves into the situated practices that introduce the technologies which deal with an alien fish by going one step back. It presents an historical overview that shows the changing rationale about salmon and trout on both a national and local level.

Notes

[1] As stated in Chapter 3, the settlement process dated in 1903 corresponds to the Republican phase organized by the Chilean State and excludes the native inhabitants of pre-colonial and colonial times. The life of native people was documented by on-board chroniclers since the times of Magellan and extended intermittently by sailors, naturalist and Jesuits missioners during the process of conquer and colonization.

[2] By 2005, Puerto Cisnes had two places offering Internet access. One, was a paid-by-hour system known as cybercafé and the other was the Public Library. The Public library was a small building right beside the Municipality. It provided free internet access thanks to a national program called *BiblioRedes* - Library-Nets. The program was financed by a public-private partnership between the State Office for Libraries, Archives and Museums - *Dirección de Bibliotecas, Archivos y Museos* - and the Foundation of Bill and Melissa Gates.

[3] *La once* is a light meal, typically eaten by Chilean families, that normally replaces dinner. It consists of tea or coffee to be accompanied with slices of bread and assortments of sweet and salty food. The time that it is served varies, but generally ranges from 19:00 to 20:30. It's a meal where the family gathers around the table.

[4] The history of Puyuhuapi is rather peculiar; in 1934 a group of young Germans professionals flee Europe and with the help of Chilean explorer Augusto Grosse claimed land and settled in the Puyuhuapi fjord. The taskforce they gathered to clear the forest and build a new settlement were *Chilotes* - people from Chiloé - who were known for their ability to settle in harsh climatic conditions, for being hard workers and *hacheros* – people who worked with an ax, woodcutters, skilled carpenters and boat makers (Grosse 1955).

[5] It was of public knowledge that General Pinochet had high esteem for Doña Eugenia Pirzio-Biroli. One of the reasons attributed to this fondness is that she was widely known for her practice of astrology, an activity by some associated to witchcraft. Some magazines of the time claimed that the General had asked her to predict his future on various opportunities.

[6] Doña Eugenia and Father Ronchi are regarded by the contemporary inhabitants of Puerto Cisnes as the founding figures in the town's history. A peculiar record of this recent memory can be seen in the street graffiti by local artist who decorated the main wall of the public Gymnasium right in front the central square (see Photo 8 and Photo 9 in Annex 4) and the bronze bust of Doña Eugenia placed right beside the figures of the republican heroes O"Higgins and Prat.

[7] According to Don Luis and other local informants, the cattle shipped from Puerto Cisnes were never more than two hundred heads per season, which was marginal if compared to the cattle coming from other localities of the province. The majority came from the Estancia Cisnes, located up river, in the valley of Cisnes Medio, and from the colony of Puyuhuapi. In total, these three areas provided up to 2000 heads of cattle for each season. The sales took place in Puerto Montt, so a limited number of ranchers traveled with the cattle to secure the exchange. Peasants entrusted the sale of their cattle to those settlers with the larger share, but the economic margin was pretty small given the high transportation costs.

[8] In the narrative I have preserved the vernacular name of these trees as they were presented at the field. They corresponded to the following species: Tepa (*Laurelia philippiana)*, Coigue (*Nothofagus dombeyi*) and Mañio corresponded to two different species of the genus Podocarpus (*Podocarpus saligna* and *Podocarpus nubigena*).

[9] One of the anecdotes about the air field is that the first car in town was bought by Doña Eugenia to pick up national and regional authorities arriving by plane. Among the most remembered events are the

visits made by General Pinochet, who made special trips to this isolated village on four different occasions, due to the close relationship he had with Doña Eugenia.

[10] The correspondence between local, English and scientific names of these fish are the following: Robalo or Patagonian blenny (*Eleginops maclovinus*), Jurel or mackerel (*Trachurus murphy*), and Sierra or barracouta (*Thyrsites atun*).

[11] Demersal fish are those dwelling at or near the bottom of off-shore waters.

[12] The location was one of the most polemic aspects of these spontaneous settlements. They were located in State owned Islands regarded as Protected Areas and therefore the government did not want to officially acknowledge the *de facto* settlement and using technical arguments refused to grant them basic services. Father Ronchi was a key figure who fought in favor of the recognition of these towns and the right to claim property and basic services for their inhabitants, something he finally obtained in 1999.

[13] *El fiado* is an extended system of local credit in Chile based on trust and interpersonal ties between the proprietor and his/her neighbors. The buyer asks for the supplies and the proprietor writes the debt in a notebook. The buyer pays once a month or when he/she has money. If the trust system is broken, due to lack of payment, the shop owner stops granting credit to the person and only receives cash. In the case of Puerto Cisnes a lack of payment also entailed a black list that was distributed among all the shops.

[14] The free or open access regime of fishing was decreed in 1978 under the influence of the neoliberal economists known as Chicago Boys. Their objective was to liberalize the previous system based on historical rights. As pointed out by Peña Torres: *In the mid 1970s there was a wave of criticism against the doctrine of historical rights, which still dominated the issue of fishing permits. The main criticism was that this type of regulation prevented competition between potential investors, monopolizing the resources to the benefit of those already established. This criticism rose in parallel to the rapid growth of the Chilean fishing sector from the mid 1970s until the late 1980s. As an outcome of these ideas, the Law Decree (L.D.) 2442 (1978) led to free access. This implied that all applications for fishing permits (from resident fishermen) should be accepted, if minimum technical requirements were fulfilled. This policy was consistent with the government's political priority to promote economic growth of recently re-privatized industries (including the fishing sector) as a way to consolidate widespread re-privatization that took place in the Chilean economy between 1975–82* (Peña Torres 1997: 257).

[15] Due to research commitments, the company shall remain anonymous, as well as the real names of its employees, hereinafter I will call it 'GrandSalmon'. Chapter 6 fully intends to delve into the social organization of labor within this company.

[16] Doña Quina, a diminutive of Georgina, was honored in this manner, by the general manager of the company, for her role in the selection of the first sites for salmon farming in Puerto Cisnes. This particular story is described in the Chapter Five.

5

Salmon go to Chile:

The technology of domestication and the domestication of technology[1]

> *Domestication: to adapt (an animal or plant) to life in intimate association with and to the advantage of humans* (Merriam-Webster Online Dictionary)

This chapter reconstructs some of the historic enterprises by which salmon was introduced to the southern hemisphere and the Patagonian environment. If Chapter Four was the history of the settlement of Puerto Cisnes, this chapter focuses on the changing practices, institutions, and technologies that made the acclimatisation and domestication of salmon species in Patagonia possible.

Chile had become the world's second largest producer of farmed salmon and trout in less than 20 years. Experts present Chilean aquaculture as an exemplary case of the country's export oriented economy and technological innovation. In most accounts there is a tendency to display grandiose portraits of the industrial development whereas at the same time detaching salmon farming from both local historicity and its material constituency. One of the aspects obscured by these narratives is that, unlike other exporting countries, salmon are not native species to Chilean rivers and therefore its adaptation was a process of continuous experimentation[2]. This chapter offers some insights to fill this gap through both a brief review of the early attempts to introduce salmonids in Chile and two empirical case studies of the domestication of salmon and trout in the town of Puerto Cisnes prior to the industrial development of fish farming. It gathers and presents historical and ethnographic material that shows us both successful and failing practices that have contributed to the introduction of salmonid species in the southern hemisphere. It is argued that some of these forgotten practices were many times intended to address completely different aims that eventually led to the constitution of the current export oriented activity. Bringing them to light might contribute to reposition the importance of local practices in the naturalization of exotic animals and the domestication of technology. At the turn of the century, however, biotic interventions have heightened the scrutiny of conservationist movements leading up to a new set of controversies about fish farming and invasive alien species. A perspective on the entanglement of historical context and situational repertoires of communities of practice in processes of domestication should lead us to reassess our thinking on issues of biological conservation. In this chapter I briefly sidestep from fish farming to fish framing.

A brief history of salmonid species in Chile

Attempts to introduce salmonid species in Chilean rivers can be traced back to 1865. The most comprehensive work, if not the only one trying to historicize those efforts is that of Sergio Basulto in a book entitled: "The long journey of Salmon; a forgotten chronicle". Although others sources may be complementary, Basulto remains the main source in terms of providing a contribution for the following historical overview. The following account intends to present some events that depict the changing rationale behind domestication from the early endeavours of acclimatisation of species followed by attempts at domestication for ocean ranching purposes that led to the industrial confinement of fish as livestock late in the 1970s. This is not to argue that I see those processes as driven by an evolutionary rationale that can be explained by clear cut causal factors. To the contrary, I see them as a reflection upon the entwined interaction of context and contingency as it was perceived and acted upon by situated actors over time. This is an explicit critique on the treatment of economic history in terms of events that can be explained through an input-output model of causes and effects. As criticised by different historians (Hughes 1986; Cipolla 1992 [1988]; De Landa 2000), this type of historiography tends to make projections of the means-end scheme over historical periods in order to accommodate *a posteriori* explanation of rational causality wherein contingency is reduced to historical need. I argue that instead of causal chains of events we need to look at the entangled network of interactions throughout history that have created the current state of affairs. In other words, the associations that over time are creating what we called 'the social' (Latour 2005).

From initiatives of 'heroic individuals' to governmental affairs

Looking for what triggered interest to introduce alien species of fish to Chile, I found an enlightening clue. Basulto quotes an early report of a French geologist commissioned in 1848 by the Chilean government to make a geographical mapping of the resources of the nation:

> *Chile has a really low number of freshwater fish; in the Andean lakes there is none and just a few in the rivers of the central provinces, something attributable to the cloudy water conditions. Some species can be found in the southern rivers and streams that spring from the coastal mountains* (Pierre Joseph Aimé quoted by Basulto 2003: 19, my translation).

This statement is part of the first attempts of certain pro-western elites to bring in alien species, and could be interpreted as the early mobilization of a proto-scientific rationale of places with 'vacant ecological niches'; an idea that was widely spread in colonial regions of the southern hemisphere and it is still held by ecologists of naturalization (Lever 1994: 3; Draper 2006: 1). In addition, Basulto suggests another two concomitant trends: the familiarity of European immigrants to consume and angle certain species; and the interest of the authorities in diversifying both the diet of the population and activities for recreation (Basulto 2003: 1). In regard to the latter, it is interesting to quote the historical view from the fly fishermen perspective;

> *Although no one knows for sure who Chile's first fly fishermen were, testimonial evidence inherited through time tells of fly fishermen in the middle of XIX century. Several European immigrants, attracted by the country's exuberant geography and by the abundance of fluvial*

> *systems were the first ones to try, but due to the* ***lack of aggressiveness of native fish****, specifically that of the Perca Trucha (Percichthys trutta), the sportive enthusiasm resulted in a pastime practiced by a few that with great nostalgia remembered the European salmonid fishing sessions* (in bold my emphasis, Goycoolea and Sandoval 2003: 41)

Hence, it seemed that first attempts were somehow linked to the interest of European immigrants to recreate the familiarity of certain activities; a practice of re-territorialisation, that in this case entailed the mobilization of a more 'combative' fish at the expense of the 'lazy native' fish. These first attempts to introduce alien fish species are presented as individuals' enterprises. However, they reflect not just the existence of networks that allowed the extremely complicated transport of eggs and the subsequent technologies of acclimatisation, but of a set of institutional relations that favour such trials. The main institution that conducted the acclimatisation initiatives in Chile was the National Society of Agriculture which financed and hosted demonstrative experiments for the introduction of 'valuable' fish and other species from Europe (Basulto 2003: 23-4). This process was happening simultaneously in other places in the southern hemisphere which tell us how the practices of translocation of biological organisms were embedded in institutional settings identified as 'acclimatisation societies' (Anderson 1997: 474; Dunlap 1997). The first one was formed in Paris in 1854 and, five years later, a group of British naturalists funded the second one in London whose influences later spread throughout the colonies and emergent nations (Dunlap 1997: 305). In the case of fish, there are examples demonstrating the importance of these 'acclimatisation societies' for the introduction of trout in Tasmania (Lien 2005: 663), New Zealand and South Africa (Draper 2006). With regards to salmonid, the first recorded attempt in Chile appeared in 1865 in the newspaper "El Correo del Sur" that in a short note welcomed the efforts being made by the rich coal mine owner Luis Cousiño to import salmon eggs and acclimatise the species in southern rivers. There is no further record of the results of this enterprise (Basulto 2003: 37). In 1878, there was a second recorded trial with eggs brought from Scotland. A rich landlord called Tomás Urmeneta asked for help from the German naturalist Rodulfo Phillipi in breeding the surviving eggs. The results of this experience are also lost in the mist of confusing records. Later, around 1885, Cousiño's widow, Isidora Goyenechea, had a second try at breeding brown trout (*Salmo trutta fario*) in the Chivilingo River to the south west of the coal mining town of Lota. She hired two Scottish experts who successfully brought the eggs to term. But apparently, records are not clear either whether the trial failed as a flood swept the hatchery away. However, Basulto quotes three historical accounts that registered angling of some trout in the same river by 1903 and one of the exemplars was even embalmed for the Chilean National Museum of Natural History (Basulto 2003: 42-44).

Parallel to the private initiatives the government started its own trials under the leadership of Julio Besnard, a French veterinarian hired by the government to head the Department of Animal Husbandry at the University of Chile. Most of Besnard's expeditions to Europe failed with regard to the introduction of fish because of the difficulties of keeping quality standards on the shipped eggs. Authors agreed, however, that he set the technical groundwork for future successful imports (Basulto 2003: 47-63; Goycoolea and Sandoval 2003: 43). In 1897 the Scottish aquaculturist William Anderson Smith handled out a short report entitled: "Introduction of Salmon in Chile". It was the first consultancy requested by the Chilean government on this matter. Its value was

dismissed by some naturalists of the epoch but it demonstrates a growing interest amongst governmental authorities in the issue.

A decisive impulse was given by the government of Balmaceda in 1888 when he contracted a young German named Federico Albert. Albert got enough support to build the country's first fish hatchery in 1905 in Río Blanco located in the mountain range of Aconcagua valley. There, Albert and his two assistants succeeded in acclimatising rainbow and brown trout though he also tried to propagate several other species including Atlantic salmon. The first shipment of eggs came from Hamburg but one part was abruptly disembarked in Buenos Aires because the eggs were close to opening. They were immediately brought to Chile by train and transported by donkey through the mountains to the newly built hatchery. In the coming years Albert and his two assistants seeded salmons in the southern provinces of O'Higgins, Colchagua, Talca, Linares, Maule, Cautín and Valdivia. The success of these seeds and the persuasive strategies of Mr. Albert encouraged the government to finance two new hatcheries in southern Chile; Maullín (1910) and Lautaro (1916) (Basulto 2003; Goycoolea and Sandoval 2003; Vergara et al. 2004). They started regularly to import egg shipments of Pacific salmon varieties from hatcheries in the United States. By 1930 some salmonid species were established in the country (Basulto 2003: 168).

> *The work of seeding fingerlings done by the hatchery Río Blanco and particularly Maullín, had provoked a fast and visible impact on the growth of trout and salmon populations between the region that goes from Biobío (currently Region VIII) river to Llanquihue (Region X)* (Basulto 2003: 167, my translation).

But the salmonid introduction program reached also southern geographical scope. In fact Basulto quotes a very interesting record for the purposes of the following section namely a witness' account of the acclimatization of salmon in Patagonia:

> *In 1931 the land surveyor Angel Rodríguez, was on duty by the Office of Property of Aysén doing some measurements in the Tictoc Bay. In his report he affirms that while doing net fishing caught abundantly trout and king salmon, with an average weight of 4.5 kilo. Eight years before a team of the Office of Colonization seeded eggs in those seas* (Basulto 2003: 169, my translation).

Between 1927 and 1943 there are at least four records of seeds of Atlantic salmon and brown trout in the rivers of Magallanes, the southern most region of Chile (Basulto 2003: 170). Although most accounts deemed the introduction of Atlantic salmon to be less successful, there is an interesting record of its naturalized presence in the Cisnes River of Aysén in 1941;

> *I was able to gather exceptionally promising information that on the salty waters at the mouth of the Cisnes River, Rhine salmon (Atlantic salmon) of up to 15 kilograms were caught* (Pedro Golusda 1941, quoted by Basulto 2003: 171, my translation)

All of the events presented so far to describe the endeavour of introducing salmonid to Chile, can be hardly linked to a rationale of economic interest. Over this period, the figure that best represents the ambivalent interest in the study of nature as well as its engineering and control was *the naturalist*. The motives of some of these individual actors have been made available through historic records but they probe to be meaningful just

when embedded in similar practices. As we shall see later, the 'nature' that so called naturalists were trying to domesticate, obeyed and reflected a set of practices whose acceptability was unchallenged; conservation was understood as the introduction, monitoring and restocking of species that were regarded as valuable for human affairs. In this framing of the process, the judgement of success for acclimatisation in these first stages was always related to the presence of self-sustained populations of alien fish on rivers and lakes. The affirmative indicator was then expressed through the enjoyment of the practice of angling and fly fishing and not in terms of economic impact or the establishment of a commercial fishery. In sum, the motto for the early acclimatisation attempts must be found in recreational value and embodied in caught fish, perhaps, immortalized in photographs from that period and/or the embalmed Museum exemplar.

The scientific turn to salmon ranching

For some years salmon disappeared from the forefront of acclimatisation records but it kept stubbornly running the rivers. Their continuous presence is evident through the increase of fly fishing activity, outfitters, and fishing lodges (Goycoolea and Sandoval 2003). The next turn of governmental interest for salmon can be traced to the late 1960s but shows a different concern. The involvement of more specialized governmental agencies and various bodies of international cooperation to reintroduce salmon in the Chilean rivers this time derived from an interest in applying scientific knowledge in the construction of commercial fisheries based on ocean ranching[3].

Accordingly, in 1967 there was an agreement between the Fishing and Hunting Division (FHD) of the Chilean Agriculture and Livestock Service and the Peace Corps of the United States, to repopulate some southern rivers with Pacific Salmon and for an expert exchange to teach aquaculture technologies in Puerto Montt. The personnel of the FHD, the new fisheries-related institution that later would become the National Fisheries Service (Sernapesca), played a significant role in looking after international cooperation programs to explore the feasibility of commercial salmon ranching.

Central to all accounts of salmon farming in Chile were the attempts at salmon ranching done by the FHD and the Japanese Cooperation (JICA) after the agreement signed in 1969 (Shimazu and Puchi 1985; Dufflocq and Palazuelos 1988; Basulto 2003; Vergara et al. 2004). The experts coming from the Japanese technical counterpart worked for the Japanese Fisheries Association. This cooperation triggered a fluent exchange of people, egg shipments and the adaptation of aquaculture techniques. After examining many regions, jointly with Chilean technicians, Japanese experts decided to focus the attempts in Aysén, on the northwest of the Chilean Patagonia, a region regarded as having the most appropriate conditions for the release of four species of Pacific salmon; chum salmon *(Oncorhynchus keta)*, cherry salmon *(Oncorhynchus masou)*, silver salmon or coho *(Oncorhynchus kisutch)* and pink salmon *(Oncorhynchus gorbuscha)*[4] (Shimazu and Puchi 1985; Basulto 2003: 217). For serving their purposes they built a hatchery in the Claro River near to Coihayque, which in time created the necessary know-how to produce eggs in Chile, a crucial milestone for the consolidation of salmon farming. The cooperation program ended in 1987 and although its results were deemed to be modest, there was an extension of the agreement for another two years this time under the head of CORFO (The Chilean Economic Development Agency). Although the new agreement was still

aimed at the introduction of self-sustained salmon population, this endeavour was overshadowed by the rise of commercial fish farming.

The fate of a number of parallel sea ranching projects was also sealed due to the consolidation of confined salmon farming. The last attempts at salmon ranching in Chile included a project ran in the Region of Magallanes by Fundación Chile, a public-private venture for technology transfer, and a project of the Canadian International Development Agency (CIDA)[5] directed towards creating a self-sustained artisanal salmon fishery in the X Region. As Basulto clarifies:

> *These attempts (sea ranching) dissolved over time and were finally forgotten. The idea that a natural population established in an open circuit (oceans and rivers) could be a competing factor for salmon farmers who were using intensive systems of confinement, might have contributed to the shift towards fish farming. Moreover, the country lacked clear regulations as to the ownership of salmon runs and therefore fishing by third parties would eventually become problematic* (Basulto 2003: 223, my translation).

I am not suggesting that salmon ranching and salmon farming were separate chapters in the commercial phase of salmon domestication. The interconnections and translations between the two activities interweave so much that I would not hesitate to speak of one large process that had changing aims over time. Incompatibility of the two was a consequence of legal difficulties to address property issues related to fish that were released to grow in a common resource such as water bodies. The versatile technology of confining fish into net-pens helped to settle this conundrum in favour of fish farming (see Chapter Six). Indeed, a good example embodying the double translation from sea ranching to fish farming and the interchangeable management between private initiative and public agencies can be found in the following account. In 1976, the American company Domsea Farms Inc. started running a project of sea ranching in Chiloé Island. They built a hatchery in Curaco de Vélez to breed and release king salmon and coho. The first successful return of fish occurred one year later. Over time the results were not lucrative. Despite of the poor results Fundación Chile bought the facilities of Domsea in 1981 to expand the program of sea ranching (Dufflocq and Palazuelos 1988). They soon realised the convenience of turning to fish farming thanks to the net-pen technology and became the first company in Chile to produce salmon at seawater farms under the label of *Salmones Antártica*.

Renewed interest in salmon from the late 1960s clearly stems from increasing specialization of certain governmental agencies in the fisheries sector that were building networks with international cooperation. These agencies – FHD, SERNAPESCA (National Service of Fisheries), IFOP (Institute for the Development of Fisheries), CORFO and Fundación Chile - were embedded in the developmental planning of State agencies in the 1960s. A myriad of projects were still after self-sustained populations of salmonid but now they were clearly aiming at the creation of a commercial fishery that could coexist with recreational activities. The Japanese project became flagship of this decisive turn. During its development there was massive production of field scientific data as well as the creation of valuable local expertise related to fish breeding. The results did not gain momentum within the expected frame – sea ranching - but, instead, gave an impulse to fish farming. In short, one could say that *fish farmers* took over *fish ranchers*.

I also want to emphasize the importance of these projects in shaping the Chilean fisheries and aquaculture-related institutions that were constructing their respective frameworks of action. The introduction of salmon triggered a further specialization in the fisheries apparatus as well as some enduring overlap and cross-fertilisation with international development agencies. These institutions were not working in the void of a scientific bubble; they came into close contact with local actors in various ways and thereby some of their objectives drifted from the planned intervention and were mobilised by local interest. The following two cases are accounts of this. They also illustrate how boundaries between public and private initiatives become blurred when practices, in this case the domestication of fish, take shape in the entangled networks of agents at the local level.

Women and fish: unknown stories at the dawn of aquaculture

While doing fieldwork in Puerto Cisnes in year 2005 I happened to come across two interesting stories. By that time people I met were well aware of my particular interest in grasping every detail about salmon farming, but of their own initiative they tended to situate my enquiries and search in the context of the recent arrival of the companies. One day, I asked the school teacher Carlos Saavedra about how he remembered the arriving of salmon farming to Puerto Cisnes. His answer, hesitant at first, provided an extraordinary clue:

> *I don't remember it as something that really struck us at the beginning as did the construction of the highway or the hake fishery boom …but the salmon farmers…Well yeah, I do remember the first company arriving around 1989… but you know what? Something like six years before there was an experiment with a small floating cage anchored not far away from the wharf, where Doña Eugenia (the major) was breeding 'salmoncitos'. Later, they escaped…*

That experiment was the first local encounter with salmon farming. Reconstructing the event it turns out that the woman who was a civil leader and appointed Major of town since the early 1980s, the hard-headed Eugenia Pirzio-Biroli (see Chapter Four) decided that the project ran by the Japanese cooperation to introduce a salmonid population in the Region was of unexpected importance and thereby people of Puerto Cisnes should get involved at any price. That is how a local test was run under the larger umbrella of the JICA project.

A few years later a second elderly woman seemed to play a crucial role, despite being omitted by official accounts of aquaculture, in the decision made for the first company to settle on the coastline of Puerto Cisnes. As described in Chapter Four, *Doña Georgina* – locally known as Doña Quina - was one of the first settlers of the area as early as 1942 before the town existed. She and her husband claimed land and settled in Isla Tortuga, one hour away by rowing from what later became the village of Puerto Cisnes. Decades later, in 1989, an extraordinary event for the coming of commercial fish farming occurred with Doña Quina as visionary advisor. Her little known story (see Case 2) tells us much about the importance of contingency for social and technical change.

In following up both stories in the field I met and interviewed most of the actors who played a part in those experiences. Unfortunately, both women had passed away but the

resonance of certain events was still present in the sometimes dazzling, other times detailed and vivid accounts, of local witnesses. These types of stories are often marginalized in accounts of technological development. Yet, they are the associations of events and actors on which the domestication of fish and of fish farming technology truly hinge.

Case 1: Doña Eugenia, the Japanese and a salmon farming experiment

Within the framework of the joint project between the Japanese Cooperation (JICA) and the Chilean fisheries authorities[6] to introduce Pacific salmon in the rivers of Aysén (Shimazu and Puchi 1985), there is one story of sociological interest for the aims of this chapter. Let us move beyond the thorny discussion as to the conditions and scientific paradigm that favoured the naturalization of alien species and, instead take a closer look at how this scientific project was brought to the attention of the people of Puerto Cisnes by an assemblage of disparate actors and events.

In 1981, the major of Puerto Cisnes, Doña Eugenia Pirzio-Biroli caught wind of the salmon release experiment being carried out by the Japanese team in the proximity of Coihayque. It is unclear how exactly this encounter happened but in the aftermath everyone agreed that she was so enthusiastic about the potentiality of this project that she managed to convince the researchers to run one of the experiments in the bay of Puerto Cisnes. Doña Eugenia was well known for her persuasive strategies that were launched at regional and national authorities and included different sorts of spoils and stratagems, but also for her fierce determination to carry out whatever project she had in mind. In chapter four we saw that the road to Coihayque was built in 1981-82 and, although called a highway, was nothing but a dirty road; therefore for her it must have taken no less than 7 hours by car to reach the regional capital, something which she often did to keep abreast of the latest events. In order to have a local counterpart to materialize the project she enrolled Cisnes' primary school teacher Guillermo Rauld who was in charge, among others things, of a technical course called: "Marine Resources". As he explained:

> *At that time there was a national pedagogic strategy called 'Training Schools of Frontiers' - "Escuelas de formación fronterizas"- that emphasized the need to get students living in isolated areas to transform their available natural resources into economic activities. Doña Eugenia was a visionary, in that she thought that the students of Puerto Cisnes should learn and profit from the management of marine resources. In this context she supported the study of salmon. That is how the historic fact of the first experimental cage for salmon farming came to be in Puerto Cisnes.*

She contacted personnel from the Institute for the Fisheries Development (IFOP) and offered to grant salaries to hire two local caretakers under the technical supervision of the school teacher. It was agreed that salmon fingerlings and feed supplies would be provided by the researchers as well as part of the basic materials needed to build the experimental cage. The teacher was trained by both Japanese experts and Chilean technicians to take periodic measurements of fish growth. They built a small cage of 5 x 5 meters width and of 5 meters depth. It was made of wood from a variety of cypress, locally known for its resistance to water, and some empty and sealed metal barrels acted as floating devices. In 1982 they started breeding cherry salmon (*Oncorhynchus masou*) and

due to the successful adaptation to local conditions they were released after only few months. In the next season they tried Pacific salmon also known as coho (*Oncorhynchus kisutch*) and rainbow trout (*Oncorhynchus mykiss)*. According to Rauld the most impressive growth was that of coho so the breeding of trout was discarded due to its lower economic value.

Everything was done in a very rudimentary fashion and the process of learning and the adaptation of available technologies from the side of local personnel required a great deal of improvisation and creativity. Carlos Gómez was the daily caretaker and feeder during the three year experiment. He explained to me:

> *I rowed to the cage routinely two times a day for almost three years. Each time I fed the fish with five kilos of pelleted fish meal, and once a week we measured some fish. The cage was pretty small so I could manoeuvre it on my own. I had an assistant for some time but she (Doña Eugenia) couldn't afford salaries for two workers. We constantly had to improvise. Many times we ran out of food, so I went fishing and fed them with smashed fish. Once when we were completely out of food stock, I fed them with rice! They always did well and after gaining some weight the Japanese came and released them. They (the Japanese) just wanted to make sure that they could be grown here.*

"They" wanted to know if fish could be raised in the region. This is not such a strange remark for two concomitant reasons: locals found salmon and trout so alike that they tended to treat them as interchangeable categories and, second, all of the *Cisnenses* I spoke with agreed on the fact that they had coexisted with trout for as long as they could remember. According to many testimonies, trout was a very common fish in local rivers and streams; quite remarkable aspect given that most records of the acclimatisation endeavour pointed north of Rio Puelo as the limit of the successful introduction of salmonid (almost 400 kilometres north). In any case, local and experts attributed the key elements of Puerto Cisnes success to the water quality, typical of estuarine streams, mild temperatures, adequate salinity, and free of pollution.

The experiment itself and the techniques employed initially caused both curiosity and scepticism among the local population. This implied that several times Carlos went rowing to disband local kids who were playing around the cage:

> *Besides kids, who sometimes went fishing near to the cage, folks used to tease me: why do you go everyday to feed those fish? Why do you waste your time? You could instead go fishing for a few days and earn double the money. Take into account that hake fisheries were booming.*

The project came to an end with a dramatic succession of interlocking events. First, there was a huge storm that released some fish. Later a sea lion broke the net eating some fish and releasing the rest. That was the first sea lion attack to salmon cages in this experimental phase that I recorded. According to Carlos, the event taught that when salmon reach a certain biomass their size makes them irresistible prey for sea lions. In addition to these two contingent events, the agreement with IFOP was restricted in terms of monetary support for the feeding costs thus compromising the financial viability for such a small municipality. The definitive end of the experiment coincided with Carlos' decision to quit his job and to try the new booming activity: the southern hake fishery. For people from Puerto Cisnes not directly involved in this process, the

hallmark of the end that sticks to their memory is the sea lion attack on the cage. That was a fatal bite for the first salmon farmers of Cisnes.

The primary research objectives of the joint Japanese-Chilean project were strictly tied to verifiable returns of Pacific salmon over a particular period of time as a way of prospecting a future for salmon ranching in southern Chile. The successive release and control of fish returns were considered to be quite low (less than 1%) so the project was deemed a failure by the research team members[7] (Shimazu and Puchi 1985). However, its results in the long term are now reckoned to be of enormous importance to further boost commercial salmon farming especially the training of qualified personnel, including many Chileans who received study scholarships or did research in Japan, the adaptation of hatchery technologies for the local production of eggs, the study of hydrological conditions in the region, the study of salmon physiology and behaviour in those latitudes. (Basulto 2003; Vergara et al. 2004)[8]. Not the least achievement was that they found local people who were eager to learn and once initial resistance was overcome they became skilfully engaged in the emergent activity challenging the misconception of unruly fishermen reluctant to change.

The long-term effects of the experiment have been dismissed by some who consider them to be separate and unique traits in the process of domestication. I argue that the scientific representation of the results is void of practical content and local agents, all of which has create a historical view that differentiates and separates this local experimental phase of successfully commercial salmon farming. The strict focus of the Japanese team on the potential for salmon ranching made them underestimate their role in advancing knowledge that was critical to salmon farming. In certain ways, the scientific framing of the experiment, at least as expressed in the project reports obscured the practical matter of dealing with fish as well as the existing knowledge of trout behaviour in the wild (see Case 2). That is what Carlos did through the daily practice of fish feeding and dealing with the contingencies of a novel activity. It is through these interactions that teams were developing skills for the long term process of domestication at other sites. Referring to his first experience Carlos asserts:

> *I learned a lot by observing the Japanese. They did not speak Spanish so we did not talk to each other but only afterwards I realised how many things done intuitively were later replicated in salmon farming at a different scale.*

According to the local authority at that time, the long-term objectives were not attained but in fact the experiment became a precedent for commercial fish farming in the region. The Puerto Cisnes' salmon experiment records the first local initiative to domesticate fish and to improve fish farming technologies *in-situ*. It was also the first aquaculture concession requested by a municipality with such an aim. As Rauld points out:

> *The dream of Doña Eugenia was to reach a level of sustained development for this activity over time. Her primary idea was to explore the commercial phase of aquaculture in joint action with the school. Unfortunately, a small municipality like ours could not afford the increasing costs of new research. Part of her dream later became a concrete reality, but in a different form. The technical school (liceo) is now training students in aquaculture, it has a small research centre in Isla Magdalena and many of them are currently employed by salmon farming companies.*

The extent to which this earlier historic experiment influenced the first salmon farming company arriving in the area in 1989, is not clear. By that time the information was available in the format of research reports and two of the Chilean salmon farmers' pioneers in the region had direct knowledge of this early experiment - Pablo Aguilera and Mario Puchi[9]. Together, they created a company in 1988, which initially was just a hatchery but soon became the second fish farm installed in Puerto Cisnes and over time became the second largest company in the world. The information generated by this experience must have had two clear messages. First, the quality of the water in Puerto Cisnes had proven to be excellent for the breeding of confined Pacific salmon and trout. Second, there was a population already familiar with aquaculture who could provide both workforce and the experience to develop the activity. These two conditions may well have influenced decision makers.

What exactly triggered the advent of salmon farming companies to Puerto Cisnes is complex and difficult to know. But, the practical conditions that have lead decision makers to open the first commercial fish farm at a particular site in Puerto Cisnes is full of interesting ethnographic material. The following story narrates the moment where the decision was apparently made. It shows the value of local knowledge and the importance of contingency of encounters in the uncertain composition of social life. This is what change is made of.

Case 2: Doña Quina and the selection of the first fish farm site of Cisnes

As described in detail in Chapter Four, Doña Quina (Georgina) and her husband Manuel settled in Isla Tortuga in 1942. I reconstructed her life history through the narratives of her daughter Graciela and later, the details of a decisive event for salmon farming through her son- in-law Don Luis.

In 1989, almost 50 years after they had settled, Doña Quina was one of the last permanent residents of Isla Tortuga. Her husband had long since passed away and her only daughter had married and moved to Cisnes in the 1960s. By then, she was a 75 years old grandmother of seven granddaughters. She lived alone but refused to leave due to her love of the land. For her relatives from Puerto Cisnes it took less than half an hour by motorboat to reach Tortuga whereas in the past it was more than one hour by rowing with the proper tide.

Don Luis, Doña Quina's son in law, had a few days off from his tough work as a middleman in the hake fisheries (see Chapter Four). One day, he received a visit from his neighbour Pedro who asked if he could do a one day job for him. He needed a motorboat pilot to transport some important people from the capital Santiago. They wanted to spend a day navigating around the fjord in search of places to start running a new business. He accepted and embarked immediately together with three people, his neighbour, and the two *afuerinos* - outsiders. One of them was the entrepreneur Mr. Ortúzar. It was a prospective trip to gather information about possible sites in the Puyuhuapi fjord potentially suitable for fish farming. The visitor did not mention the company's name or any further development plan but presented it as a personal project. They went along for half a day and Don Luis suggested stopping by his mother-in-law's house for a rest. She very kindly invited them to her home and offered them tea. Once Don Pablo explained the fish farming plan to her, she enthusiastically replied that she

thought that Punta Tortuga was the best place to breed salmon. Surprised by her enthusiasm, the group accompanied her to the river stream that ran close to her home. She signalled the river and said:

> *I have personally fed trout – salmoncitos – in this stream with chunks of bread. They came upstream and settled in this natural pond. They quickly got used to me just like chickens do, thus when they see people now they start jumping out of the pond to see whether they can get some food.*

Thus, according to Doña Quina, the inlet of Tortuga offered mild and clean waters where salmon species grow in ideal natural conditions. She pointed out that, although people from Puerto Cisnes were not fishermen before the boom of hake fisheries in the 1980s, locals had always angled *salmoncitos, los naturales* (natural salmon, most probably trout) in some small lakes or upstream in certain rivers.

That conversation was revealing for Mr. Ortúzar and his committee to the point that in the subsequent weeks he often dropped by her home and spent time having tea chatting about his project. As Don Luis later told me:

> *He was fascinated by the vision of this old woman (la vieja) about the activity. Her enthusiasm was one of the things that pulled the trigger. Moreover, the few people who knew about his idea in Puerto Cisnes had expressed disbelief that something like this could be done and thought the chap was full of hot air – este caballero anda con una papa harto grande.*

In the following weeks he even brought some workers to Tortuga to run the experimental construction of cages. Doña Quina who was always around steering the process – *copuchando* - told them they were using the wrong wood and strongly recommended the cypress of Guaitecas as the most water resistant. Don Pablo had a good laugh and told the workers to do whatever she advised. Don Luis recounted the following story:

> *After some weeks, Don Pablo's departure time arrived. He said he would come back and went to say good bye to my mother-in-law. In this meeting he asked her: What do you think about me coming back here to Tortuga to run a hatchery and a fish farm? Her answer was firm and decisive; I have no problem at all, how could I be an obstacle to something that will bring jobs to a town that needs activity. She offered free use of the beach along her land as a base for future operations. She gave her word with a hand shake. No one in town believed that could have happened.*

Some months later in year 1990, he came back bringing a ferryboat - *barcaza* - and headed straight to Tortuga bay. He brought workers, material (metallic cages) and a budget to put things at work. The chosen place was that pointed out by Doña Quina and the operational base was her land, just as she had offered. The first site for a seawater fish farm in Puerto Cisnes was settled and ready to receive fish. This was the origin of Centro Tortuga. The aftermath is narrated as it was seen by Don Luis:

> *And soon the fingerlings arrived. They arrived to the wharf in Cisnes by truck, having travelled all the way from Coihayque in plastic tanks. Everything was done very carefully with fear at every step; no one had experience in handling fingerlings properly! They placed them in a small cage in the water and dragged it along by ferryboat. A trip you normally make in one hour*

took the whole day so as to avoid having the cage to sink too much, or float too much or pull the shoal too fast, all of which would have damaged the fingerlings. It was a logistical nightmare… But they finally succeeded. Nobody really knew a thing about this activity. I went back to my job in the fishery and a year later I met Don Pablo for the second time and he asked me to go with him to visit Centro Tortuga. Fish were ready for harvesting and that is when he offered me work with the company, as a skipper of the company's new ferryboat. I had never piloted a barcaza before but I said 'yes'. It was an opportunity to get a job closer to where my family was. The ferryboat was baptised 'Doña Quina'.

The story of the settlement of the first fish farming site in Puerto Cisnes revealed some of the contingent elements of social change. However, Doña Quina is not a metaphor of contingency as she was a concrete actor. But what is important about her is not the epic narration of an extraordinary individual (indeed she probably was) but how local knowledge, as expressed in a moment of decision taking, was crucial in the articulation of various actors and influenced the constitution of salmon farming as activity. Again, as I have shown in Chapter Four, this account is a prime example for our pragmatist understanding of *knowing* as the fundamental technological artefact (Hickman 1990: 21)

In the technologies and practices of domestication presented thus far, the focus has been on revising the different framings that emerge from the activities carried out to introduce salmon to Chilean ecosystems. However, once this was accomplished, there was yet another turn, this time a call to look at technologies that help to get rid of alien fish; a turn to conservation issues that are re-framed in contemporary sustainability debates. The main actors in these debates are conservation biologist and environmentalist whose concerns can be phrased as questions: Who said that we want or need these fish? Do we really know the ecological consequences of introducing an alien species? Here, the technology of domestication is reversed through claims for the domestication of technology.

A conservation paradox or a paradox to be conserved? A contemporary reading

The previous account focused on the precedent attempts to introduce salmonids, rather than on the constitution of salmon farming activities as such. In doing so, I have adopted an actors' perspective without questioning the consequences of practices arising in this process of domestication over time. Nonetheless, any postscript after the coming of commercial fish farming cannot ignore the emergence of opposing views which illustrate a serious turn to issues of biological conservation. The introduction of alien species has been a common practice since colonial times (Crosby 1988; Clark 2002; Basulto 2003; Draper 2006) but so has the criticism about the possible threat to indigenous species and local ecology. In the Chilean case of salmon acclimatisation, these concerns were present from the very beginning (Basulto 2003: 178-179). However, in the framing of the problem of 'naturalization', certain rationalities and practices were mutually reaffirming the introduction of species as a desirable aim for the interests of emergent nations. Conservation for those impelling the introduction of salmon meant the continuous efforts for restocking rivers and lakes with its cherished fish. At the end of the 20th century the emergence of sustainability and biodiversity issues gained momentum, which was somehow crystallized at the Conference on Conservation of

Biological Diversity (CBD) in 1992. Since then, there has been intense questioning and reframing over what conservation means;

> *It is a well-known fact that exotic species threaten native biodiversity, ecosystem functioning, animal health, and human economies, as some catastrophic examples have taught us. Most countries concerned about their native fauna and flora avoid introductions or, in case of inadvertent introductions, consider eradication of the alien species* (Gajardo and Lairke 2003: 1173).

Their observation reflects new ideas about the resurgence of conservation issues. Concerns are raised by heterogeneous groups of biologists and conservationists who together claim to represent the organisms threatened by alien species and plead for an ecosystem cleansing through responsible scientific management. The most radical stream within this trend is *restoration,* which is being intensively applied to freshwater communities in the northern hemisphere in order to allow the running of original wild stocks of salmon (Lackley 1999: 377; Quist and Hubert 2004: 309). Back to our case, conservationist scholars argued that the salmonisation of Chile represents a *conservation paradox* (Gajardo and Lairke 2003):

> *Biological sustainability entails spatial and temporal dimensions and requires knowledge of the dynamics of the ecosystem, which in turn requires appropriate time scales and horizons. It is difficult to predict the behaviour of an ecosystem without knowledge of the entire system's components. Regretfully, Chile lacks this information. The biology of more than 40 freshwater species, including their genetic characterization, is barely known. The government has generally allocated money to projects with a high probability of generating immediate revenues, and these often involve exotic species such as salmon and abalone* (Gajardo and Lairke 2003: 1174).

The problem is that the introduction and restocking occurred over the past century and therefore has no longer accountable representatives, except for the government, which can be targeted to be blamed by the new breed of conservation scholars. Indeed, Gajardo and Lairke omitted that the introduction of salmon has a long story of disparate actors and aims; an omission which clearly reinforces their thesis of immediate counteraction. Accordingly, their questioning now addresses how we assess the hazards brought about by fish farming. More specifically it claims to be an evaluation of the consequences that frequent escapes of farmed salmon could have on the ecosystem as they develop into top predators, the transmission of diseases to native fish populations, the genetic transfer to the 'wild' population, and risk for human health (Barton 1997; Soto et al. 2001; Naylor et al. 2005). This type of research makes a strong plea for more research on freshwater resources and the applicability of management criteria with scope that go beyond the interests of aquaculture (Pascual et al. 2007). Meanwhile, others advocate for the tightening of environmental regulations and more active State involvement in enforcement (Barton 1997: 323-4), and the more radical being the proponents of 'restoration' measures (Quist and Hubert 2004).

Of course not everyone sees salmon as an ecological threat. For instance, Basulto cautiously raises a question on the issue of conservation which somehow integrates a more historical perspective, suggesting that this conservation paradox might be of some worth to be preserved:

> *The planned experiments of fish stocking ended long ago. They were replaced by the accidental release of escaped salmons from inland facilities but principally from seawater farms due to storms, net leakages or mismanagement. In some cases these salmon have acclimatised and eventually they constitute wild populations…Are we facing the unplanned path, undesirable for some and long wished by others, for the definite settlement of one or more species of salmon?* (Basulto 2003: 259, my translation).

This statement makes clear that the changing status of fish is produced by shifts in the framing of practices of particular activities. The changes are triggered and backed up by epistemic communities both inside and outside the scientific realm that by various means amplify concerns and values over contested matters. In the following section I would like to review the perspectives of different bodies of knowledge vis-à-vis domestication. How are they being produced? What are the links, if any, between scientific and interest groups in framing the relation to fish?

How to think about processes and technologies of domestication

The following should not be read as a framework of any sort. Indeed, this section is purposely placed after the historical account and ethnographic descriptions because I hold the conviction of their self-explanatory power. Instead, I seek to bring to light some of the *framings* put to work on the issue of domestication. That is the scholarly ordering done by different groups that have had practical consequences on influencing other actors or vice versa, on how social actions over time create strategies of resonance imprinted in bodies of knowledge within certain epistemic communities. At this point, it is worthwhile to think about the differences between frames and framing. Frame (or framework) is a noun that represents a passive object enclosing another object or a fixed categorical ordering imposed by someone - the researcher - onto an 'object'. Instead, framing is the verb that reflects on the process carried out by practices that produced such bounded understanding of things.

Domestication as a concept with different trajectories has often nested a range of contradicting approaches to human-animal relationships. As Russell made clear, it is difficult to formulate a single definition about what domestication means, but this controversy over its meaning, indeed, exemplifies different debates on nature and culture (Russell 2002: 286). I do not aspire to reach a definitive closure on the subject but, quite the opposite, to unfold some contested angles and explore to what extent they are related to the grounded practice of animal management. The subject of domestication clearly provides space for thinking about the entanglement of ecological relations with the productive side of human-animal relations. Whether these entangled relations are deemed in terms of control, property or exploitation will depend on the associated values of practical and moral communities.

Hence, the subsequent discussion explores some contemporary ways of thinking about domestication found in the literature. The approaches were not chosen so as to build a comprehensive review but, according to the traces left behind by actors who mobilised these ideas about framing the long term interaction between animals and human beings. This allows us to explore in more detail the porosity of ideas and practices in mutually shaping relations.

A critical assessment on perspectives of biological imperialism and bioinvasion

Perspectives on biological imperialism and bioinvasion, although conceptually different, share a concern of the effects of geographical translocations of biological entities. Generally speaking they mainly stem from disciplines such as cultural geography and economic and environmental history. They can be regarded as two sides of the same coin. They drastically differ insofar as biological imperialism draws on cultural determinism whereas bioinvasion is founded upon ecological determinism. On the other hand, they are united through the thinking of culture and nature as two separate things that are somehow unbalanced due to mutually disturbing intervention.

Biological imperialism is a radical critique to the idea of biological superiority imposed through practices of biotic introduction by western colonizers in the South (Crosby 1988; Dunlap 1997). The thesis of biological imperialism is anchored in representing biotic movement from north to south as predominant. However, this process of translocation have also occurred swinging back and forth between hemispheres or, as in the case of European settlers introducing fish species in North America, where it also went from north to north and from east to west (Quist and Hubert 2004). In any case, the idea of valuable species coming from the northern hemisphere was mobilised and quickly became rooted in the economic and scientific pro-western elites of the young nations.

The thesis of biological imperialism takes a critical stand against the ideological content of such practices, which are based, according to its proponents, on the strong belief of the cultural superiority of western European people. In this view cultural control over nature was translated and extended overseas through the biological attachments of settlers, such as animals closely associated with humans beings (both desirable such as cattle and horses, and undesirable like rats, rabbits and all kind of varmints), pathogens and weeds (Crosby 1988: 107). Crosby is a prime example of this thesis, warning us to the unintended consequences of processes of domestication as well as the uncontrollability of nature in new environments. But he goes beyond this by extending his thesis of biological dominance to the submission of indigenous people. These accounts are intended to reinterpret ecological history as if it were embedded in a strong cultural determinism with a biological basis.

Bioinvasion refers to the spread of invasive alien species (Elias) that are seen to have adverse effects on colonized habitats (Stoett 2007: 437). Biologists and geographers have documented a broad variety of ecological catastrophes worldwide, which over time have helped to set up international bodies and various institutional arrangements to asses their impacts, such as the Global Invasive Species Programme (GISP) and the Invasive Specialist Group from the World Conservation Union (Stoett 2007: 442). The distinctive effect of the bioinvasion approach if compared with biological imperialism, is the active set up of expert systems and research networks to stop or at least to mitigate the introduction of 'alien' species. Here again we can find an array of proposals tackling 'the problem' of bioinvasion that is translated into practices. One problem that is indeed recurrent to all kind of transnational migration is the call to create international governance systems to rule out biotic movement (Stoett 2007). But the most radical strand of counter-bioinvasion demands active measures of control and biological containment, something generally known as *restoration,* which includes several techniques of eco-fascism such as the massive onslaught of invasive species that in the case of fish

includes 'selective' intoxication of river streams (Quist and Hubert 2004: 309). The principle behind restoration lies in looking for the means to reverse environmental changes provoked by biotic mobility in order to recreate an ideal equilibrium in nature, which only exists in a hypothetical pristine space.

These accounts on bioinvasion and ecological imperialism provide the intellectual basis for a breed of conservationists that think of alien and indigenous as essential categories that are nothing more than an anthropic projection of the distinction between the coloniser and the native and the cultural over the natural. This thinking can be criticised as i) widening the gulf between nature and society inasmuch as it regards humans beings as an organism separate from ecological relations; ii) it dismisses or downplays the agency of organisms other than those closely attached to current human values, and; iii) it dogmatically sustained the idea of ecological equilibrium. On the contrary much work has advanced to challenge these three axioms. Firstly, humans have always been an active part of the influx of species around the globe (Clark 2002: 115) as well as constitutive agents of their own hybridity (Latour [1993] 2006). Second, Actor-Network theory has largely demonstrated the capacity of non-human actors to shape the world, challenging the anthropocentric view on both the construction of our habitat and social relations (Callon 1986; Latour [1993] 2006). In addition, as Reed has emphasized, the distinctive property of animals is that of autonomous movement (Reed 1988: 114) and therefore life has mainly shaped itself through mobility (Lever 1994: 236; Clark 2002: 113). Hence the persistence and dynamics of organisms cannot be fully controlled and tied to clear boundaries, as is postulated by conservationist. The modern western cult of conservation holds humankind accountable as the responsible agent who must determine and manage the conditions of life for the survival or extinction of animals (Ingold 1988: 12). Thirdly, the idea of ecological equilibrium has been challenged by non-linear descriptions of biophysical history (De Landa 2000; Clark 2002: 114). Disturbances, upheavals, outbreaks, fires and contagions have not only shaped sites all over the world, but have opened new conditions that have been seized by opportunistic organisms, both humans and non-humans.

Co-evolutionary approaches

The principal exponent of this thesis is Richard Norgaard (Norgaard 1994). He argues that what has rendered the modernisation project a failure – in his words, the betrayal of progress - is the imposition of a way of seeing – from a western and scientific perspective - that prevents us from understanding the interwovenness of environmental, organizational and cultural problems (Norgaard 1994: 2-9). He proposes a co-evolutionary framework to change, which denies any supremacy of culture over nature or the reverse and, instead asserts a mutually interactive coevolving system. Although he does not draw cases from domestication, he exemplifies the randomness of co-evolutionary events of unforeseeable occurrences through biological introduction of species from other ecosystems, and the genetic drifts and mutations implied in this process (Norgaard 1994: 28). The relevance of Norgaard's co-evolutionary approach stems from a focus on contingency as integral to change and its defences of biological and cultural pluralism as a key aspect of sustainability. However, the main draw-back remains in its incapacity to go beyond the dualistic categorization of life. Irrespective of their presentation as mutually shaping systems, a divide between nature and culture remains. This would not necessarily be a problem for certain outcomes of the co-

evolutionary processes, but what about entities that can not be problematised precisely because they are in borderlands? Like for instance in his introductory example of pests, as coevolving with pesticides and policy. Where do these pests stand? Are they a cultural category or a natural entity? Are these emergent entities not the ones that trouble us more?

Norgaard's view is similar to symbiotic approaches that deny human intentionality as an intrinsic condition for our relations with animals. Symbiotic approaches question the utility of the concept of domestication since their main argument is that both parties adapt to a variety of human-animal relationships (Russell 2002: 289). Co-evolutionary and symbiotic perspectives tend to empower animals in their relations to humans while downplaying the issue of exploitation.

The two clusters of thought framing domestication that I reviewed here still maintain the distinction between society/culture and nature. Co-evolution, symbiotic approaches biological imperialism and bioinvasion inform our thinking about domestication but still hold the separation between cultural beings and natural elements. In these approaches experts appear to represent nature as its spokesperson yet of a particular kind, which rejects the most visible by-products of the human-animal interface; its monsters, alien, abhorrent, noxious, untamed, hybrid entities. But, where do those that are silenced stand? What is the place of grounded and situated encounters between these entities and localised human actors? By contrast, the two approaches explored below aim to dissolve the boundaries between nature and culture/society.

The symmetric constructivism of ANT

The most inspiring work on domestication coming from Science and Technology Studies (STS) is Michel Callon's early work on scallops (Callon 1986). In his chapter Callon proposes elements for what he called the sociology of translation, which can basically be summarized as a methodological strategy concerned with how scientists get to represent others actors over contested issues in nature. The basic premise is that of symmetrical treatment of conflicting viewpoints and free association among the natural and the social abandoning a priori distinctions(Callon 1986: 196). Applied to the case of conflicting views on the domestication of the scallops and the fishermen of St. Brieuc Bay, Callon convincingly showed how controversies are mobilised, and how actors are enrolled and represented at critical points by a group of scientists. His work demonstrates how agency is distributed through a network of interactions between scallops, scientists and fishermen rather than positioning them as passive objects in the project of domesticating nature. Since published, the case has become a milestone for Actor-Network Theory (ANT)[10].

Another contribution, although not strictly applied to the domestication of non-human animals, is the social constructivist approach to technology (SCOT) of Wiebe Bijker who, while giving space to a great deal of contingency, combines historical and sociological perspectives to assert that technological objects acquire their meaning in the heterogeneity of social interactions (Bijker 1995: 6). The importance of the SCOT approach is that the track of situated historical records illuminates that technologies and technological objects could always have been otherwise, since its constitution is subject

to both a combination of the efforts of various actors and contingency before a period of interpretive closure.

Recently, Lien has applied Actor-Network Theory to understand the trajectory of Atlantic salmon to Tasmania with an interesting approach that intersects mine at many points (Lien 2005). However, a general criticism that can be applied both to her work and that of the some of the new breed of ANT scholars, is the very idea of *applying* a semiotic recipe for various situations obscuring or ignoring some of the shortcuts already discussed by ANT scholars themselves (see compilation of Law and Hassard 1999; Latour 2005: 141). When meaning is overemphasized at the expense of practice the assumptions of the researchers are amplified and the descriptive value of ethnography is betrayed. Meaning is context and practice-related. While I acknowledge that objects are effects of networks of relations, I think that there is an abuse of semiotics as the sole way of representing those interactions. This ignores that meaning is attributed by phenomenological entities that have corporeal, situated, social and relational contact through shared practices. In spite of this criticism the symmetric constructivism of ANT is highly valuable. Without doubt they present a way forward in our understanding of how nature and society are being composed. Nonetheless, they are not the only approach opening new paths. I propose that some of these criticisms can be overcome, or complemented, by including insights from phenomenological approaches.

Affordances of interactions: an ecological psychology approach

The key author for a cumulative amount of work known as ecological psychology is James J. Gibson (Gibson 1979). Gibson's concept of affordances has been indispensable for its followers to develop an interesting view which for this case can be enlightening. On the one hand, the ecological approach helps us to understand the dynamics of the biophysical world as a relational indivisible totality of organism plus environment that can be applied to humans or other animate beings (Ingold 2000: 19). On the other hand, it is crucial to show how animals in autonomous strategies to seize the world present themselves as *affordances* for interactions with humans (Reed 1988). The reverse is also possible, how humans have *afforded* them means and space for conquering new ecosystems (Clark 2002). In this approach there is a place for fish to act and interact. We do not fully control the process. Life forms – fish in this case – find their way through mobility and humans are part of that continuous exploratory experimentation of the possibilities within our environment.

Ingold, rejecting the pervasive Cartesian division of mind and body, makes a fundamental point about fish consciousness and animal welfare debates:

> *Consciousness is no longer to be seen as a* ***capacity*** *to generate thoughts, but as a process or* ***movement****, of which thoughts are an inessential by-product. This process is none other than self-creation of the acting subject* (in bold his emphasis, Ingold 1988: 9) .

Accordingly, an ecological psychology approach recognizes animal consciousness insofar as they act and interact upon the environment as humans do. The implication of such a view is that ethical values associated with practices of animal control and manipulation must be stripped off essential characterizations of anthropomorphic

sentient beings or reductionist biological responses and instead move towards an ethics that takes into account the relational and *interactive* behaviour of animals inserted in an environment that fully includes us as human beings.

The last two forms of framing domestication allow us to think of a redistributed agency which does not lie in individual human or non-human entities but in the relational position of actors. The difference among them is that ANT focuses on the ways in which nature is being translated and represented. Therefore interactions are semiotic, that is they might be looked upon the signs and meanings generated among entities. The affordances approach does not focus on signs but on the sensorial unfolding of relations through the affordances that those entities enable or constrain for each other when they encounter.

The four approaches presented above addressed scientific ways of understanding animal-human relations. In the next section I propose to look at local forms of relating to a slippery fish that resisted a single frame.

What about the fish?

The continuous pursuit of different strategies to domesticate salmon and trout over time with the active mobilization of people, fish eggs, and techniques cannot fully explain the dynamics of the persistence of fish in Chilean rivers. We have reviewed different attempts to trace its presence in the South Pacific Ocean through historical accounts, international and inter-agency programmes of stocking, oceanographic hypotheses, aquaculture techniques, conservationist data and scientific studies of various species' ecologies. None can claim conclusive accounts as to salmonid behaviour and the evolution of its population, although at best some seem to overlap in their tentative conjectures. But, what about the fish? As local accounts tested, fish have been present in the Chilean Patagonia long before contemporary scientific efforts began attempts at domestication. I do not seek to raise a new theory of spontaneous population nor do I have any interest in trying to decipher the puzzle, but I do want to stress that salmonids have become a component of Chilean habitats, productive systems and local livelihoods. Fish farming, fly fishing, marine research and Chilean cuisine are already dependent on its existence. Importantly then, fish have also domesticated people who have learned over time to deal with salmonids in a wide range of activities.

Thus, a possible way forward is to understand fish in context, and by fish in context I mean both as an organism in a medium that affords certain interactions, and as a changing entity dependent up on the communities of practice it that comes across. In this regard, and based on the ethnographic material presented in this chapter I now propose a tentative typology for these alien fish.

One family, various fish: a sociological typology of an alien fish

Throughout this chapter I have reduced fish to broad categories; either salmon or trout. From the taxonomic perspective of natural scientists they correspond to different

species and genera but belonging to the same family: Salmonidae. However, from my study in the field I came across various types of fish that were not named according to scientific nomenclature. People referred to these fish in quite diverse ways. I am not referring to the vernacular equivalence of scientific category. The naming I found in many field situations was not derived from any essential feature of the fish but from different understandings given by practical manipulation or use of the fish by groups of actors. In others words, they are context-related fish. The context makes the fish as much as the fish make the context through its relational position against group of people. I have no pretension to challenge scientific taxonomy but, rather to propose a sociological typology that illustrates the different significance given by people according to various practices or lifeworlds. The interesting thing is that these categories can be traversed by the same single fish because they are neither related to any particular fish phenotype nor attached to stakeholder interests, but to encounters with actors that value them differently when they are met in diverse situations. The following categories can also depict the different conflicts that are sparked when one fish enters into another category. In other words, naming is an accurate mechanism to represent practical disputes that different people have when, depending on the situation, they must fight, preserve or access the fish they are after. Now, I turn to introducing some of these changing categories. Bracketed in Spanish I wrote the most common label found in the field followed by a short description of its relational content vis-à-vis various communities of practices and an array of repertoires.

Farmed salmon (salmón de cultivo)

All fish bred as livestock within confined artefacts, such as tanks, ponds and net-pens. The three main types of farmed salmon grown in Chile are easily identified by workers within the industry; the coho (Pacific Salmon), salar (Atlantic salmon) and trout (rainbow trout). They are mainly differentiated in terms of shape, voracity, and harvest time. Sometimes, at the seawater farm, they might be spoken in terms of belonging to a specific stock – *cepa* - highlighting the salient feature of the breed. The cycle of farmed salmon and trout always end up in a further commoditized category according to the process it follows; frozen head on, frozen HG (head and gutted off), different trim fillet, portions, loins, hamburger, smoked, etc. Even the dead fish is cleared from the pond, placed in bins and sent for processing as fish meal. Sometimes this process of commoditization does not get to an end due to accidents (storms, sea lion attacks) or mismanagement (illegal discharges of death fish, mishandling of nets). Farmed salmon value is pitched against global prices of each product and respective sorting into quality categories. Once in the market, farmed salmon is widely advertised as the tasty container of healthy omega-3 fatty acids.

Escaped salmon (salmón escapado)

Escaped salmon refers to all fish that gets out of confinement for unexpected reasons, be it an accidental release provoked by haphazard situations or mismanagement, as already mentioned above. It has become a massive problem for companies as well as a serious concern for environmentalists and fishermen. Fish farming in Chile now has clear procedures known as "contingencies plan" to face such events. These emergency plans normally aim to recover some exemplars but in practice are limited to denouncing the escapes. Escaped salmon has no clear legal status therefore it is a major source of

dispute among fishermen and companies because the former, in principle, are not allowed to catch them. Fishermen learnt the lesson and encouraged by lawyers sued the companies after events of escapes under the argument of damage to the fisheries species on which they base their livelihood. There are a number of cases on record where fishermen have obtained substantial monetary compensation from the companies through this channel. Marine biologists and conservationists have targeted escaped salmon as a major object of study and criticism. The former use moderate scientific language to make the case for the ecological importance of research while acknowledging that to date marine environmental data are scarce and inconclusive. The conservationists mobilise the fear of an ecological catastrophe showing the decline of certain endemic species and the extinction of others. Curiously, they also raise the potential maleficent effect of genetic pollution through the possible interbreeding of farmed salmon with 'wild' – in this case naturalised - populations. Escaped salmon are also blamed for inducing human health risks when eaten by fishermen and local populations as it is assumed that most of the time salmon escape before antibiotics in their organism have passed the biological half-life that marks the end of the period of restriction for consumption. In this case fish are portrayed as the mobile container of antibiotics. Another edge of escaped salmon is its in-between status when interacting with fly fishermen. As an illustration I remember the complaints of a Patagonian outfitter – fly fishing guides – striving to run a business in a remote area of Puerto Cisnes. He finally attracted a customer that came all the way down from Boston Massachusetts, flew from Santiago to the small airport of Balmaceda and then travelled another few hours by car to Puerto Cisnes where he embarked onto the fishing boat. Unfortunately for the outfitter, his first catch was an escaped salmon which triggered anger and disappointment, ruining the fishing trip and leading to an epilogue where the outfitter gave the earning back.

Caught and released trout or lucky fish (pesca con mosca)

This category of fish relates to the practice of fly fishing and can be found along many streams, rivers, and lakes of central and southern Chile. It belongs to naturalised populations of various species of trout and salmon that are caught and released by fly fishermen. It might also be the most photographed salmon of all categories since the merit of a good catch is reflected in both the size of the fish and its resistance to being caught, which is capture in photographs and narrated in stories around campfires. Fishermen know how to identify different species; however, often they are surprised to find exemplars in streams where they were not seen before. The habitual practice is to release the fish after the catch but sometimes one or two are kept as part of an outdoor meal. However, as I heard many times in Patagonia, fish stop being lucky when they encounter Argentinean fishermen or local anglers whose fishing purpose is that of consumption. Many outfitters complain about the indiscriminate angling of tourists with techniques that go beyond the subtle and artistic fly lure. An example is the aluminium swim bait – *pesca con ferretería* – that they regard as evil luring devices hide many hooks and easily fool the fish. I was told by an outfitter that in a technical meeting of fly fishermen and governmental agencies they calculated that every salmon in this category represents an income of up to 500 USD for the tourism sector. Without question it is the most expensive fish of Chilean rivers.

"The naturals" (Salmoncitos, los naturales)

This might be the easiest fish of all since local people have identified it running through the streams, rivers and lakes for a long time and when caught by anglers, its only purpose is that of food for human consumption. It has inhabited Chilean rivers thanks to stocking initiatives throughout the century but it is unclear how it has persisted and transformed in those ecosystems. In any case local people do recognize it as 'the natural one', be it trout or salmon which confirms its state of adaptation to wildness. In this sense when escaped salmon are angled by locals they become an edible product and no distinction is made. The techniques employed to catch the naturals vary and include, nets, fishing rods and rustic reels. When caught, this fish always ends on the dinner table.

Wild salmon (salmón silvestre)

In practical sense this category must correspond with the one described above since all acclimatised salmon out of confinement are already freely running in fresh and seawater environments and most seem capable of creating sustainable populations. However, since there are many who claim a difference between 'real' wild salmon from the northern hemisphere and 'acclimatised' salmon in the south, this category has come to represent an "oppositional fish". By this I mean that wild salmon has been mobilised by different groups to increase concerns about animal welfare as much as food safety (misuse of antibiotics, dioxin, PCBs, organics contaminants, etc). Wild salmon only exist in countries such as Norway, UK, Canada, USA, Japan and Russia where it is both a part of long established commercial fisheries and an icon defended in many forums by different groups concerned with the status of its conservation. In Chile, wild salmon defined in those terms can only be found canned and smoked in gourmet food shops.

Cooked Salmon (cocina chilena del salmon)

This category comprises all fish in relation to its main use value of food. However, changes in feeding practices should not be dismissed as something trivial. Chilean cuisine has adapted itself to the acclimatisation of fish over time. From being an elitist component of gourmet dishes, only accessible through and amongst anglers, it has become a very common and accessible food in a broad range of restaurants and supermarkets. Through various preparations it has displaced or replaced some of the common white fish in soups and on grills. Travellers and tourists will notice that in restaurants of Chiloé Island and Patagonia, there is always salmon in the menu. Paradoxically, the production areas of Puerto Aysén and Puerto Cisnes, do not provide farmed salmon to satisfy local consumption since all of it is exported. A great deal of salmon and trout for internal consumption, is supplied mainly by one food holding that processes and sells nationally and to a lesser degree by smaller processors that buy the lowest quality of salmon to big companies. Others companies have established joint ventures to supply catering companies which in turn provide food services to wide range of customers including airlines, supermarkets, fast food restaurants, etc.

From fish farming to fish framing

I have attempted to demonstrate that the relational nature of fish categories have empirical foundations in the same way that biological fish acquire different meanings according to *what affords* to people with different practices. Nonetheless, what makes a fish different are not practices alone; the 'nature' of a fish is exclusively given neither by the properties of the fish nor by a community of practice, but is very much determined by the situation. Certain situations can frustrate the expectations of a given practice, challenge its repertoires or collide with the values related to the practice, resulting in the category being rendered controversial or undesirable for the actors involved, e.g. the fly fisherman who caught an escaped salmon. Categories change over the time as a result of shifts in values and practices, which might be expressed in the deletion or emergence of new categories. Changes in values are both diachronic and synchronic which, explains the historical construction of framings as well as contemporary differentiation.

A sociological typology like the one presented might help to strip these categories of essential features and of anthropogenic views on how we build the world, allowing us instead to advance towards a relational understanding of social life where others entities have a role in shaping us also. By keeping up-to-date and paying close ethnographic attention to the changing and relational construction of categories, we can stay alert to the emergence of new and contentious entities; the proliferation of hybrids in Latourian terms (Latour [1993] 2006), counter-tendentious mutants (Arce and Long 2000: 17) or monsters, when they are represented as technological threats (Lien 2005; Smits 2006). But, importantly, ethnography helps us to discriminate amongst those corresponding with empirical situations at field level that are not merely derived from discursive constructs. To name just a few that seem to have gained momentum and will require further empirical attention: the organic salmon (Georgakopoulos and Thomson 2005), the concern of fish as sentient being thanks to increasing attention to animal welfare (Chandroo et al. 2004; Cooke and Sneddon 2007), the transgenic salmon (Power 2003), the Cyborg fish (Johnsen et al. 2007), the Pure Salmon[11], etc. In general these emergent categories have in common that they represent debates that strive to open up space to include ethical issues in our relationship to fish, in particular, (Power 2003) and animal breeding in general (Thompson 2001; Olsson et al. 2006; Segerdahl 2007).

The contentious categories listed above also touch upon the presence of salmon in Chile and its domestication as livestock. However, I did not record its presence in the field ethnographically but rather as unfolding issues at discursive level. My position is far from denying space to represent contested or emergent issues on fish breeding ethics, conservation and so on, but to suggest possible ways forward from scientific deadlocks over divergent meanings. That is, if we shift from debates over actors' accountability in the domestication of technology, whether historical or contemporary, to look upon the intended or unintended *configurations* that have been created over time as they are, for instance, expressed in the categories I have portrayed, we will get a completely different view of biological conservation. This typology point to a slippery object defined by practices and situations in which re-combinatory blending places the fish at critical points of contestation.

I argued that the framing of an object is enabled by certain practices and challenged by others. Practices both perform and generate the framing, so framing is not outside the

socio-technical networks at stake but rather a constitutive part. Framing, in this sense, might be understood as the process of black-boxing certain practices in order to mobilise them across situations that suit a more specific and narrow interest. An emphasis on domestication has helped me to portray aquaculture beyond a mid-term representation of commercial enterprise and to engage it in a larger process of control and manipulation of animals, and specifically of marine life-forms for human purposes. The description of interconnections and situated processes over time unmasks the treatment of history as separate events driven by either technological or cultural determinism instead of unfolding an understanding of processes formed by continuities and discontinuities, success and failures, stability and change. On the contrary, when processes are looked at through a historical lens of cause and effect or the Cartesian dualism they can be presented in terms of evil or good, desirable or undesirable such as the 'acclimatisation societies' or the alien fish itself. However, from the perspective of disparate arrangements of actors and contingent events, such a bird's eye view is unconceivable. The various intentions of long term domestication projects were disputed through multiple courses of actions. Some of these projects prevail while others remain obscure to be perhaps revealed by historical crosschecks. In any case, those courses of actions were modifying our value and judgement of domestication endeavours over time, thereby making our relationship with animals politically complex.

I think the concept of domestication highlights the changing relations between human and non-human animals creating objects of representation that can not be matched to either natural or cultural categories, which suggests the need to look for situated – and collective - forms of representation of emerging entities.

The technology of domestication and the domestication of technology

I began to write this chapter puzzled that despite the fact that salmon is not native to the Chilean freshwater and marine ecosystem, it has nevertheless become a fundamental – and contested - component in a full range of activities. The starting point then can be summarized in one very simple question; where did these fish come from? The answer unfolded into a complex web of relations. By moving beyond the narrow focus that privileged one account over others, I intended to illuminate our understanding of salmon acclimatization. In short, this process was not just composed of the pioneering effects of certain heroic people, the novel use of technology or the capital allocation from entrepreneurial action as we will see in the next Chapter, but by collective engagement and the situated and contingent practices that have shaped the domestication of fish. In the broader sense, domestication was presented as those activities and practices that facilitated the mastery of wild animals according to the interest of people. Local actors are part and parcel of these processes, sometimes subordinated and at other times the flesh and blood of initiatives in the domestication of technology. The State has also been an active agent in this process but, as I repeatedly suggest, so are the salmonids, which during the more recent introduction programs became a fundamental part of building fisheries-related institutions and the creation of international networks which then drifted towards industrial aquaculture.

I have presented acclimatisation endeavours in terms of domestication since they imply the systematic use of control techniques in the early stages of the salmon cycle such as

artificial spawning, egg mobility, hatchery facilities and adaptation to new environments through selective release. The fact that salmon after this process enter purposively into open circuits either for recreational or commercial interest simply reaffirms the aims of human manipulation and cannot be disconnected from the larger process of information gathering that led over time to fish farming. But, in this process, fish becomes a slippery object that resists one single framing. That is why a focus in terms of breeding, control and property narrows domestication down to possession and mastery while in practice this control has always been contested and unstable, including the slippery capacity of fish to break down 'cultural' and 'natural' limits.

The title of this chapter was inspired by Alfred Gell's (1999) paper on the technology of enchantment. He intended to illuminate a different topic that is to rethink art not as something different from technology but as the objectual embodiment of the technical process. In short, art as the technology of enchantment finds its power in the enchantment of and for technology (Gell 1999). His word-play triggers my reasoning as to how to think about domestication. In a similar fashion, I argue that the technologies that have allowed the domestication of animals are founded upon our fascination of technology, in this case the ways of knowing how to act when challenged to control our relationship with those animals we have attributed as valuable objects for human purposes. However, just like art, our judgement of its value changes over time. The technologies of domestication have been framed by different practices in our relations to animals, which in turn imply changing concerns over the domestication of technology. By the latter, I mean the awareness that certain social groups aim to gain or exert control over the unintended consequences of technological processes. Changes to framing issues related to the control and manipulation of animals provoked critical or more visible concerns over the aims of this process. As I have shown, there is a non-linear progression in our understanding of the human-animal relationship but shifting rationalities expressed in practices which over periods of time seemed completely contradictory.

Finally, although this chapter was conceived to be illustrative of some of the constitutive practices of emergent activities and entities, domestication should also be regarded as a form of *intervention*. As expressed throughout this chapter domestication is, for some, a practice of intervention where culture enters into the natural domain through coercive control of life-forms. I prefer to conceptualize it as an intervention of a different fashion. The domestication of salmon in Chile is a prime example of the creative power of collective action over time in which the driving force does not amount to a clear cut separation of private or public initiative, local or exogenous, but to the combinatory power of interactions carried out in concrete performances and manifested by the stubborn presence of fish. Life is constantly on the move and human interventions simply offer new opportunities for life-forms to follow their own paths.

Notes

[1] The title of this chapter was inspired in the reading of Alfred Gell' chapter "The technology of the enchantment and the enchantment of technology" (Gell 1999). His play of words clicks my reasoning on how to think about domestication.

[2] An exception can be found in the extraordinary work of Sergio Basulto "The long journey of Salmon. A forgotten chronicle" (Basulto 2003). He has written the most comprehensive treatise to date tackling the many attempts to introduce salmonid species in Chile. Based in different, mainly textual, sources, he has reconstructed though uncritically the self-impose endeavor of acclimatizing alien fish by early naturalist, entrepreneurs and anglers. He was himself working for some of these programs in the late 1960s.

[3] Salmon ranching or oceanic ranching is a term "often applied to salmon released as juveniles into natural waters, where they grow to market size on natural foods. The feeding areas can be either a large lake or the ocean". The main difference with salmon farming is "that ranched animals are free to migrate to feeding areas which lie well beyond the zone of release. Harvesting can occur in the open water when maturing fish migrate back to the release location" (Isaksson 1988: 2)

[4] In a period of seventeen years (1969-1986) the JICA-FHD project seeded in the lakes and rivers of Aysén the following: 15.5 millions of chum salmon, 2.9 millions of pink salmon, 1 million of cherry salmon and 0.5 million of coho.

[5] The Canadian International Development Agency was also relevant for the development of Chilean fish farming during the 1980s by funding some of the development projects related to aquaculture in the School of Marine Biology at the Austral University. The turn to aquaculture of research and teaching of this School was crucial in the training of many professionals that later made a career in the activity, among them one of the Chilean entrepreneur that will be a case study in Chapter 6.

[6] In this point there is not coincidence among the sources with what organism Doña Eugenia was dealing with. According to Guillermo Rauld their contact was personnel from Instituto de Fomento Pesquero – Institute of Fisheries Development (IFOP) but apparently at that time the Project was having the Division of Hunting and Fisheries as Chilean counterpart. This confusion at ground level can be explained by the succession of institutions in charge over the time. On this point Basulto clarifies: Initially the counterpart institution was The Division of Hunting and Fisheries, organism that later change its name to Division of Fisheries Protection. Lately, another institutional arrangement determines that the executive counterpart of the project was The National Service of Fisheries (SERNAPESCA). In 1988 the project was transferred to CORFO, that participated through its branch Institute for the Development of Fisheries (IFOP) (Basulto 2003: 218-9, my translation).

[7] These experiments were deemed as unsuccessful greatly due to the lower rate of salmon returns. Something which has never fully discussed is the accuracy of the methods to control those returns that includes traps and rewards for information handled out by local anglers. Basulto and Joyner developed some convincing hypothesis based on oceanographic observations that could explain the persistence of some species of Pacific salmon in southern rivers. Some local accounts as well as fly fishermen have shown the persistence of coho and rainbow trout in the Patagonian rivers so it is unclear whether the naturalization as a result of this project in the long term can be conclusively regard as failure.

[8] Basulto detailed these exchanges as follows: The Project brought circa 38 million eggs of Pacific salmon, that later meant the release of 26 millions fingerlings. The Japanese International Cooperation Agency sent 52 experts over a period of 17 years and 14 missions (1972-1989). Apart from the annual reports it generates more than 20 technical documents covering different aspects. 28 Chilean experts were granted

with scholarships related to aquaculture between 1969 and 1989. When the projects ended most of the Chilean technicians were working to establish salmon farms (Basulto 2003: 219, my translation).

[9] Pablo Aguilera and Mario Puchi are professionals that became relevant actors for the development of Chilean fish farming. Pablo Aguilera did an early internship in Japan and gave a further impulse to salmon ranching. Mario, one of the Puchi brothers (Victor and Juan Carlos), was employed as the Regional Director of SERNAPESCA. In 1988 they all join to create Aquachile that becomes the Chilean largest salmon farming company and second worldwide after the Norwegian giant PanFish. Aquachile was the second company having fish farms in Puerto Cisnes.

[10] Another contribution, although not strictly applied to the domestication of non-human animals, is the social constructivist approach to technology (SCOT) of Wiebe Bijker who, while giving space to a great deal of contingency, combines historical and sociological perspectives to assert that technological objects acquire their meaning in the heterogeneity of social interactions (Bijker 1995: 6). The importance of the SCOT approach is that the track of situated historical records illuminates that technologies and technological objects could always have been otherwise, since its constitution is subject to both a combination of the efforts of various actors and contingency before a period of interpretive closure.

[11] The Pure Salmon Campaign is an international project of the National Environmental Trust with the basic premise of improving the way salmon is produced. In this sense does not oppose fish aquaculture but to prevent and mitigate its side effects. The Pure Salmon Campaign has networks of partnership in the United States, Canada, Europe, Australia and Chile (see more in http://www.puresalmon.org).

6

Becoming 'big fish'

On entrepreneurial networks and technological trajectories

> *Some significant historical phenomena are invisible at the local level, even if their manifestations must, by definition, be located somewhere, sometime. There are developments that unfold on a temporal and geographic scale that can only be recognized at the local level once they have been spotted from a more global perspective. Just as no localized observer alone can detect the shape of a storm front, or the distribution of an organic species, so some historical phenomena can be discerned only by integrating information from a spread of context* (Daston and Galison 2007: 47).

As stated in Chapter One, Norway and Chile are the world's largest and second largest producers of farmed salmon and trout. The Norwegian fish farmers were pioneering technologies to breed salmon in the 1950s, whereas the Chileans began to do prospective research in the late 1960s. During the 1980s, the overflow of Norwegian technology helped Chilean fish farming take off. Since then, Norwegians have increased their presence in Chile through technology transfers, the investment of capital and the exchange of experts. Despite the multifarious level of interdependence, most of what has been written so far are separate accounts of the development of the fish farming industry of each country. If cross-references are made, they often tend to emphasize the influence of both countries on global prices, to benchmark trends of capital investment or to compare regulatory frameworks. Generally such accounts are not sociological analyses, but geared towards enhancing competition and feeding market forecasts.

This chapter[1] focuses on the contact zones where the two industries intersect, aiming to present an historical overview of the development of salmon farming in both countries and to disclose their trajectories through the entangled performance of some of its constitutive parts: entrepreneurs and technology. This objective will be reached by integrating secondary sources and case studies, based on the description of actors' economic careers that examine the ways in which two entrepreneurs and two specific technologies have contributed to the creation of a significant part of the industrial activity through the articulation of different strategies and courses of actions. The chapter will then explain how major traits in the development of fish farming, triggered by different types of intervention, such as regulations, market and technical changes, have been translated by the mentioned actors in entrepreneurial practices, which in turn have created the conditions to influence and change the industrial trajectories. In this

sense, a distinctive feature of this account is that the history of salmon farming is not presented as a comprehensive and monolithic process. Instead, it emphasizes the entrepreneurial articulation of heterogeneous actors that have contributed to link two major production countries through the creation of certain materiality and processes related to salmon farming and its transference or appropriation beyond the original site of production.

In the last part of the chapter, I reflect with more detail on the specific constitution of the salmon farming entrepreneurs and the process by which they have become part of the global trade networks. The analysis of the emergence of these 'big fish' allows me to delve into the performative side of identity formation – a *process of identification* - where certain shared actions, progressively undertaken by salmon farmers, have become the source of a distinct category of actors and their self-validation as articulators of a capitalist global food industry.

In sum, this chapter proposes to historicize the relationship between fish farming technologies and the emergence of particular actors acting in a spread of spatial and temporal contexts: the salmon farming entrepreneurs of both Norway and Chile.

Norway and Chile:
Fish farming from the antipodes

Norway and Chile have become the main players in the worldwide production of farmed salmon and trout. In the late 1960s, Norwegians salmon farmers pioneered the technological developments required to create unprecedented activity that currently represents about 40% of global salmon production. In 2007, salmon farming was the third largest export industry in Norway, after petrol and metal. Right across the globe, Chilean pioneers began developing salmon farming in the South Pacific as late as the end of the 1970s. However, they caught up quickly and became big players in a short time, turning the activity into a global scale business, of major importance to the Chilean export-oriented economy. Given that Norway and Chile are nation-states located on the antipodes of the globe, their economic histories have been viewed and written as separate and distant national affairs. But through the study of the constitution of fish farming we can follow a thread where they share a history of technological exchange and entrepreneurial networks that must be described if we seek to understand the current performance of the salmon farming industry.

In the following pages, I will delve into the manner in which these two industries intersect each other, presenting an historical overview of the development of salmon farming in both countries, but also re-interpreting their trajectories through two interrelated case studies that shed light on the interplay between fish farmers, entrepreneurs and State agencies[2]. The approach chosen to reconstruct this history is not the comprehensive description of chronological facts and milestones, but by identifying how some of the major industrial traits triggered by different types of interventions, such as regulations, markets and technical changes can be interpreted through the way actors have re-positioned themselves over time and, even more, how they have actively influenced the further industrial trajectories.

A well known lesson from social constructivist approaches, in opposition to technological determinism is that human groups shape technologies, markets and regulations, as they are all socially constructed and embedded in local arrangements. At the same time, these social groups are influenced by different types of interventions in a mutually shaping relation that includes a great deal of contingency and controversies (Hughes 1983; MacKenzie and Wajcman 1999). In the case of fish farming, the constraining and enabling actions stemming from technology, the market and the State are some of these contingent and controversial aspects that have shaped the trajectories of the industry since it was a rudimentary activity. For example, as I will present in the following pages, the Norwegian fish farming crisis of 1991, evolved in a new type of ownership, which among other things led to an expansion of operations in Chile. And vice versa, the increasing interconnection and exchanges allowed Chilean fish farmers to draw upon Norwegian technology, making the latest expansive period towards the Patagonian fjords possible.

The spread of commercial salmon farming worldwide allows us to observe two different but interconnected histories of industrial development, through the way actors have responded to major changes in technology, market settings, industrial configurations and government regulations.

So far, so close: What are the contact zones?

To answer this question I will describe some of the multiple socio-technical networks related to salmon farming activities that have created enduring links between Norway and Chile. But above all, we may regard these associations as both a constitutive and performative part, not only of the global aquaculture industry, but of its main actors: the salmon farmers and the fish farming entrepreneurs.

The idea developed partly because of the difficulty of tracing these associations from the existing literature. To date, there is extensive research accounting for the different phases of development of salmon farming in each country, as well as an increasing number of articles focused on the social, environmental and economic 'impacts' of the industry, both at national level (Lindbergh 1999; Claude and Oporto 2000; Blanco and Amtmann 2001; Saavedra 2001; Barret et al. 2002; Gajardo and Lairke 2003; Blanco 2004; Buschmann 2005) and at a global scale (Ridler 1997; Power 2003; Hites et al. 2004; Naylor et al. 2005). Cross references are limited to weigh the importance of Norway and Chile in the international context of the aquaculture business (Bjørndal 2001; Forster 2002), to stress their importance in the formation of international prices (Eagle et al. 2004; Guillotreau 2004), or to highlight the differences of regulatory systems as a source of competitiveness and sustainability (Barton 1997).

In general, there are two types of analysis; those focusing on salmon farming as a particular market and global commodity chain, generate information to assess the consequences of competition and the performance of the global seafood market and those oriented towards warning us of the risks and vulnerabilities of developing an unsustainable fish farming industry. In neither of the cases there is any empirical information about the process of when, how and why players of both countries intersect each other, transforming a peripheral rural based activity into a global industry.

Perhaps an exception in providing a more empirical view can be found in the work of Barret et al (2002), Phyne and Mansilla (2003) and Phyne et al (2006). They are part of a joint research project named "The Institutional and Social Structure of Aquaculture: A Comparative Analysis of Norway, Chile, the Faeroes and Japan". Despite the interesting results, the approaches chosen by the authors were narrowed by research commitments to specific conceptual frameworks such as *sustainable community*, *global commodity chain*, and *clusters*, which do not record in a detailed manner the interconnections and divergences among the studied countries. Instead, they analytically isolate the fish farming activity of each country, keeping the cross-references only as a necessary background to highlight the phenomenon on a global level.

In spite of the difficulty in tracing connections in literature, those depicting the industrial development within each country are detailed enough to be a good starting point. They have proven to be useful for tracing significant events that allow us to associate the development of these peripheral countries. In the Norwegian case, there are several articles written in English that give accounts of the dawn of salmon farming from a historical perspective (Tilseth et al. 1991); of the technological milestones and the industry-building process (Aarset 1997; Aarset 1998; Phyne et al. 2006); and of the importance of aquaculture within the context of national policies (Sønvisen 2003).

There are also a number of references on the subject of the rise of Chilean salmon farming both in Spanish and English. As mentioned in Chapter Five, one of the most remarkable is Sergio Basulto's book: *El largo viaje de los salmones: una crónica olvidada* (The long trip of the Salmons: a forgotten chronicle) (Basulto 2003). He wrote an extended and detailed historical perspective, dating back to the mid XIXth century, which provides information on the first attempts to introduce salmon and trout in Chilean lakes and rivers. Other works, give account of the most recent salmon farming history focusing on aspects related to the industrial configuration and different traits concerned with technological development, markets and labour (Hardy and Castro 1994; Bjørndal and Kristin 1999; Bjørndal 2001; Phyne and Mansilla 2003; Montero 2004; Vergara et al. 2004; Våge 2005; Amtmann and Fecci 2008).

The perspectives found in literature range from economic history, neo-institutionalism, global commodity chain approach, political economy to community-based approaches, as well as a good quantity of corporate propaganda under scholarly disguise. Almost all of them are constructed around certain technological, political, and market milestones that describe the industrial trajectory with a certain degree of determinism. My intention is not to make an evaluation of this work, since it was meant to serve other objectives. Instead, for the purpose of this chapter, these secondary sources have been helpful in identifying salmon farming milestones as references and counterpoints to another type of history: the activity recreated through and by flesh and blood actors. I shall demonstrate that these actors have not been merely reactive to those milestones but, on the contrary, in sharp opposition to a simplistic cause/effect model, they have played a performative role through engaged decisions in situated actions.

Indeed, a general point to be made in this chapter will be under the light of recent research that interprets market behaviour and capitalist transactions from a performative perspective. Presenting convincing empirical information, this research demonstrates that capitalism and markets do not stand for themselves as abstract entities, but they are sustained by the performative actions of their different players: economists, brokers,

entrepreneurs and customers (Callon 1998; Thrift 2005; MacKenzie et al. 2007). This chapter spotlights the changing mechanisms through which a particular trade network – related to fish farming spread across the globe, instantiated by situated actors through a set of entrepreneurial practices, partial connections and flexible arrangements. I shall further suggest that the process of becoming an entrepreneur, which includes the development of personal relations, social ties, and the construction of extended networks of identification, might play a more important role in the transmission of both capital and technology than institutional arrangements and the inner properties of capital or technology, therefore they are crucial in the constitution of new entities and forms of organization.

Some methodological considerations

The interpretative articulation of life histories and industrial milestones is a perspective that uses an actor-oriented approach to historicize a particular human activity as it spreads across global networks. It traces history back to the way specific actors have transformed themselves from fish farmers to fish farming entrepreneurs. The narrative examines the interdependencies between technological realms of activity and human groups, as well as the effects of social recognition among peers in the configuration of international trade networks and the process of becoming international entrepreneurs.

As specified in Chapter Two, the empirical material is based on personal interviews and fieldwork done in Norway and Chile. The life histories focus on the economic career of two entrepreneurs, whose names have been changed due to my promise to make them anonymous. The interviews with the Chilean, Sr. Ross, are complemented by an interview to his sister, who was also part of the family business and several interviews of his closest collaborators who work in the company in top management positions, as well as informal talks with employees. Fieldwork was conducted in the Patagonian fjord where Sr. Ross' company has hatchery facilities and seawater farm sites, so I was also able to obtain the viewpoint of the inhabitants of the closest town. I also visited the company's processing plant and headquarters in Puerto Montt. In addition, I gathered secondary information about the company by reading specialized press[3].

In Norway, the interview with the entrepreneur Mr. Thomsen, was rather peculiar. It was held in the Trondheim airport after he enthusiastically accepted to make a stopover when flying from northern Norway to Oslo. I also benefited greatly from my interview with a Norwegian colleague[4], who had previously studied Mr. Thomsen and his company.

In the following pages, I intend to reinterpret the development of salmon farming in Norway and Chile from a single narrative. It describes the process of transformation from a rural-based activity to global food trade network by focusing on some of their specific contact zones: entrepreneurial networks and technological trajectories. The method and writing style I choose combines the life histories and economic careers of two entrepreneurs - the Norwegian Mr. Thomsen and the Chilean Sr. Ross - as they were confronted with changes in the fish farming activity and particularly with the trajectories of two key technologies: the net-pen and the well-boat. Specific aspects on the constitution of these two technologies are presented as intermezzos of the central narrative.

Mr. Thomsen and Sr. Ross:
"Growing side by side with the business"

Magnus Thomsen was born in 1954, at the time salmon farming was taking its first steps. The aquaculture pioneers were making the first experiments that led to the creation of salmon farming while he was learning to walk - and to navigate - in his hometown of Bronnoysund on the coast of Nordland County, northwest Norway (see Map 3 in Annex 3).

Young Magnus was the son and grandson of fishermen. His father owned a small fleet of vessels from which they earned a living. In those years, the first signs of difficulties for Norwegian fisheries appeared, hitting Magnus' family hard as it hit the majority of coastal livelihoods. Retrospectively, most people believe that this early fishery crisis fed the intuition and tempered the tenacity of a number of farmers and fishermen who saw in the breeding of rainbow trout in freshwater ponds an opportunity to earn extra income. A myriad of private experiments, encouraged by successful trials done in Denmark, gave way to a governmental research program called "Trout as livestock"[5]. Magnus grew up witnessing some of these aquaculture developments although his family did not directly engage in the activity. After finishing school Magnus moved to Tromsø where he studied fishery economics, whereas his older brother Jens, also of importance in this narrative, went for biology. As Magnus affirmed: *We can properly say that we grew side by side with fish farming.*

In 1964, on the opposite side of the globe, the Chilean, Daniel Ross was born. He is the elder son of an immigrant engineer who had left Eastern Europe in the turbulent cold-war years. His father ran a small ship-building company whose definite take off was marked by contracts that were granted by the Chilean navy, soon after the military coup of 1973. Daniel grew up in close contact with the sea and learned everything about boats and shipyards. Despite his familiarity with the shipbuilding business, after finishing school Daniel went for biology.

In those years the first Chilean aquaculture experimenters were concerned with different issues than those faced by Norwegians. The first attempts oriented towards commercial aims were research and release trials done in the late 1960s to introduce salmonid species in the southern Pacific Ocean. These first programs were developed by the Chilean government and international development cooperation agencies mainly from Japan, Canada and United States (see Chapter Five). This early research was undertaken to assess the feasibility of salmon ranching, a completely different objective than that of Norwegians, who were preoccupied with improving the techniques of confined aquaculture (Isaksson 1988; Vergara et al. 2004). The Chilean attempts at salmon ranching were commercially and biologically unsuccessful. However, the interest of Chilean pioneers soon

turned to fish farming[6] due to the development of a technical artifact that led Norwegians to successful confined seawater aquaculture: the net-pen.

Intermezzo on net-pens: A master key to salmon farming

At this point, we need to introduce *the net-pen technology* before continuing with the actors' life histories. The net-pen is a floating cage used to breed fish in sea water. It is a technological device that became an important milestone of unimagined consequences for Norwegian and worldwide finfish aquaculture.

After the good results of Danish technology during the 1960s that bred rainbow trout using land-based freshwater ponds, there were a series of experiments and 'accidents'[7] that convinced the Norwegian pioneers to try two unprecedented techniques: to breed Atlantic salmon confined in sea-water and; to prove that rainbow trout, a freshwater fish, could also be breed in sea water under confined conditions.

Until 1968, the activity was far from professional and attracted people of different backgrounds that became enthusiastically involved in a process of low scale experimentation. There was no clear identification to the activity and no standardized technology (Aarset 1998: 193). The big change came in 1969 when the experimental phase was consolidated through a decisive technological development. Sivert Grøntvedt, a fish farmer from the island of Hitra on the west coast of Sør-Trøndelag, created the first sea water net-pen[8] for breeding salmon in captivity. Although the technique was first known as the Grøntvedt net-pen, it is important to stress that it was the result of a flux of stimulus coming from open trial and error. (Tilseth et al. 1991; Aarset 1997; Sønvisen 2003). According to Aarset (1998), the net-pen was the milestone that, once established, spread rapidly, creating the common identification of *salmon farmers*. Doubtless, the net-pen technology had a radical influence on salmon aquaculture roughly due to three aspects: first, because it was a technological device that allowed easy low-cost replication, thereby, facilitating its adoption across Norway and abroad, including Chile (Forster 2002: 578); second, because it induced a spatial transition from land-based production to seawater sites; and third, it opened the opportunity for standardization and regulation. This last point requires further explanation due to its important consequences in the configuration of Norwegian fish farming industry. The point was concisely phrased by Aarset:

> *The wide-spread use of the net-pen technology gave the government the opportunity to estimate farming capacity using cubic meter pen volume as a standard measure. By this adoption of pen volume as a regulatory device, the control of the use and distribution of the technology was removed from the farmers (*Aarset 1998: 194).

The net-pen is an interesting case showing the ambiguous effects that an innovative technology brought to its users. The net-pen technology meant control over fish biology in productive terms, but also implied control over fish farmers by the government once it was converted into a new standard that facilitated the enforcement of regulations. Norwegian authorities designed a license system intended to ensure homogeneous distribution of fish farms along the coastal zone. This regulation was thought to favour two principles, the existence of small scale operations ensuring local ownership and the enhancement of coastal development by redistributing the economic activity throughout

rural Norway (Aarset 1998; Sønvisen 2003). The net-pen is a prime example of a political artifact (Winner 1999). Due to its attributes, the net-pen technology facilitated standardization and control which made it an artifact that cannot be detached from its political content. It could be argued that the intentionality was given by human actors but the regulations, control, as well as the empowerment of technical expansion would have taken a completely different shape without the net-pen properties.

In addition, this technology presented a temporal solution for another troublesome effect: the legal status of water resources. Indeed, fish farming originated after fish ranching – releasing fish in open waterways - became a highly controversial affair, especially in the United States and Canada where streams are public property (Isaksson 1988: 15). At the beginning, the issue of property went beyond gaining access to water or sea-water sites, but about the access to the fish itself. Let me explain this point. The activity of fish ranching was based on breeding and release and the catch occurred when fish returned up stream after finishing their growing phase at sea. The controversy can be summarized in a question-like form: Who is the owner of fish that were released and expected to be retrieved years later, upon their return to the home river? The ownership of resources regarded as common property was a very problematic issue that threatened the salmon ranching activities and, at that time, ignited a heated debate that required more than adjustment through regulations. The controversy was solved when the Norwegians developed the steel net-pen. Once again a technological device was closing one controversy while opening new ones. This time a completely new set of problems was generated by steel cages, which through the strengthening of a farming approach to marine resources created 'new enclosures' in the waterways with the subsequent controversy over water use rights and navigation routes (Ridler 1997: 65). Now let's return to our actors life histories.

The formative years: gathering experience, enrolling allies.

After studying, Mr. Thomsen went back to his hometown to work on the family fishing vessels for some time. Shortly after, in 1975, he got his *"first serious job"* as a local Fishery Advisor within the Norwegian Fisheries Directorate. His job was to advise fishermen and fish farmers about business plans[9], particularly on how to locate, finance and establish fish farms. He held this position for 10 years and he became known among the fish farmers of the region as an authoritative aquaculture expert. The State control and regulation of fish farming capacity was already in place since 1973 through a license system calculated around two technical and legal variables: the net-pen volume and the ownership of licenses. In 1977, a moratorium to grant new licenses was established, that lasted until 1981. Due to this restriction, licensing became a very political and sometimes conflictive issue, which gave Mr. Thomsen a perfect opportunity to develop his parallel passion: politics. In his spare time he engaged in politics within the local community, working for the Conservative Party. His active political membership, a reputation of being a good negotiator and his knowledge of the new aquaculture business were soon widely known and he was asked by the Minister of Fisheries to become his political secretary in Oslo. He accepted and moved to the Norwegian capital. In 1984-85 he was working at the Ministry to set up the new legislation for aquaculture, which

according to the literature, was the first attempt to de-regulate the activity (Aarset 1998; Sønvisen 2003: 43). 1985 was also the year where the state budget proposal done by the Ministry of Fisheries targeted aquaculture research as a national priority (Aarset 1998: 199). In 1986 a new party came into power and Mr. Thomsen left the position. He was now hired by an important bank in Oslo to assess investment in the fishery and aquaculture sector. He commented about this period: *After serving fish farming from a political position, I turned then to work financing the business.*

1986 was also a significant year for a decisive step taken by Mr. Thomsen's family when they decided to engage in the aquaculture business and got a license to farm Atlantic salmon on the coastal strip of their hometown at Nordland County. This strategic step was driven by Magnus, who, after gathering considerable experience in different areas of fish farming convinced his brother Jens and his father Hakon that it was time to enter the business. They founded 'Thomsen Invest', a small family enterprise created in order to get financial support for operating. Magnus's knowledge of the financial system was crucial to get loans under preferential conditions. They set up a company structure where Magnus was the chairman of the board and his brother Jens was the operation manager.

> *This company was just like all average companies in Norway until the beginning of the 1990s. We had our own license and employed 4 to 5 people. It was the democratic way of business characteristic of Norwegian coastal towns.*

The Thomsen family entered the business taking advantage of the opportunity to have one of the few new licenses allocated in the northernmost part of the Country in a period where expansion was restricted to established farms (Aarset 1998: 198).

Meanwhile, in the antipodes Daniel Ross's studies of biology took an unexpected turn. Many of the examples used during lectures by his professors came from sea organisms, given that the Faculty was located in a coastal city of central Chile. He developed a fascination for maritime studies that led him to be granted a scholarship to visiting Norway. In 1986, he was invited to do an internship in a Norwegian foundation committed to the transferring of salmon farming technologies in peripheral zones of northern Norway in order to promote rural development. Remarkably, Sr. Ross' trip to Norway was also when he met Mr. Thomsen for the first time. This was a decisive experience for Daniel. Indeed, soon after his return to Chile he left his studies in biology and shifted to marine biology, this time in a school located in southern Chile that was re-orientating its research towards aquaculture[10]. But his enthusiasm went even further when he convinced his family of the emerging opportunities presented by aquaculture and began an experimental fish farm financially backed by his father's shipyard company.

After visiting Norway I realized that fish farming was very feasible given the Chilean conditions. The first projects in the Region were just starting and we decided to carry out an experimental phase in the surroundings of Puerto Montt.

Shortly after, in 1987, the experimental farm became 'South Pacific' one of the first Chilean salmon farming companies.

Consolidation and crisis: leading in times of uncertainty

After a couple of years working in the financial sector in Oslo, Mr. Thomsen stepped down and took the position of Secretary General of the Norwegian Fish Farmers Association (nowadays FHL in its Norwegian abbreviation) from 1987 to 1994. The duties that this top representative position entailed, led him temporarily to be the chairman of the Federation of European Aquaculture Producers (FEAP) and the International Salmon Farming Association (ISFA) where he established close contact with the Chilean salmon farming representatives. The early 1990s were times of technological consolidation, but also of organizational restructuring. In 1991 the Norwegian industry faced a major crisis triggered by market constraints and the financial crisis of the monopolistic fish farming sales organization (FOS)[11]. The crisis led to many bankruptcies and triggered an opportunistic move from political and industrial groups; the regulations over ownership and scale of the business were turned down and changed in order to facilitate the entrance of large investors and industrial players (Norges Offtenlige Utredninger 1992: 52; Aarset 1998: 200; Sønvisen 2003).

Mr. Thomsen was at the crossroads of salmon farmers and businessmen. He represented the fish farmers, but given his experience and contacts in the financial sector, he took a controversial stance:

I knew that the only way out of the crisis was to open the system to big players which could finance the growth of the business.

For him the success and failure of the salmon farming industry was something personal, since he felt he had helped to transform it from a rural activity into a national business. Therefore, he was ready to open the activity to big financial players, a step that many fish farmers were reluctant to accept. He stepped down from the top representation of the Fish Farmers Association and entered a new phase in the private sector. He decided it was time to learn about the aquaculture supplies industry and began working with the largest food producer in Norway. This company was a farmers' cooperative with both agriculture and aquaculture food divisions. Mr. Thomsen was appointed as top manager of the aquaculture division, but he persuasively convinced the board that fish farming was a completely different business than agriculture and managed to transform it into an independent company. In a process of successive acquisitions and mergers,

where he played an active role, the end result was the creation of the largest Norwegian aquaculture feed company.

Whereas Mr. Thomsen was becoming a key player in the Norwegian Salmon Farming Industry, Sr. Ross, back in Chile was not just consolidating his company, but also constituting, with another six founding members, the first Chilean Salmon Farmers Association. The birth of this association marked a qualitative turn for Chilean aquaculture; it upgraded the activity from a dispersed group of people practicing salmon farming, to a corporate body of entrepreneurial representation. In the meantime, Sr. Ross went to France to do an in-depth study of fish hatchery biology, which was crucial for his future business plans. Sr. Ross was also one of the first entrepreneurs taking the relevant as well as risky decision of expanding operations to the XI Region of Aysén in the Chilean Patagonia.

In the early 1990s most salmon farming activity was concentrated in the X Region of Los Lagos. Patagonia was seen as the promised paradise for the growth of salmon farming activity, but a nightmare in logistic terms, since the region lacked any and all of the necessary infrastructure. There were no suitable roads, only one small airport, far from the coastal area, a single mid size port of small scale capacity, energy was the most expensive in the country and the low population was unable to satisfy the projected labour demand. Despite all the uncertain conditions, Sr. Ross bought land in one of the Patagonian fjords as early as 1989 and after making the legal plea to be granted with both freshwater and sea water concessions became one of the first salmon farmers in Aysén. The land he bought was privileged, because it also had hot springs that made him think of a combined strategy. In addition to a hot spring-based heating system for the hatchery process he foresaw another project in the Patagonian fjords. With the help of his father and his sister Carolina, he grounded the basis for a touristic complex that was constructed making use of economies of scale mainly given that the maritime transport was done by their own cargo ships transporting supplies for salmon farming as well as materials and supplies for the hotel. As result they built a salmon hatchery, a number of sea farms and a hot-spring hotel that, over time, became an expensive luxury spa at the heart of a Patagonian fjord. They clustered all these facilities 20 minutes away from Puyuhuapi, a small town of 500 people which provided the 50 people they required, year round as labour force for both activities.

Salmon going global: building a giant, shaping a region

In 1997 Mr. Thomsen left his position at the aquaculture food company and went back to his hometown, in order to be fully dedicated to the family fish farming business. The familial enterprise *Thomsen Invest* had turned into a medium size company that by 1997 had four licenses. But the objectives traced by Mr. Thomsen went further: *We decided was time to grow both locally and to build an international company.*

Mr. Thomsen, a charismatic negotiator, started to enrol other local fish farmers and by 1998 with legal ownership restrictions swept away they summed 20 licenses and decided to change the company's name to '*Northern Seafood*'. Making use of his financial networks, he convinced some investors to put money in the company and go international, but this negotiation entailed a big trade-off for the Thomsen's imposed by the financiers; after three years the company should be listed in the Oslo stock market, thereby opening it to changes in ownership. The Thomsen brothers accepted.

> *We did not have the money to take the steps needed to grow. Yes, we lost control, but that was the only option available to make it possible. I accepted those conditions. The alternative was to remain a medium size family business.*

Under the new company structure Mr. Thomsen became the Chief Executive Officer (CEO) and his brother Jens remained as Operation Manager.

> *Just to give you an impression how fast we grew; in four years time we went from 5 million euros to 500 million, we grew up from 20 employees to 4,000 employees. And at the same time we went from a family business to a company with a thousand shareholders. That was a huge challenge.*

A key factor in Mr. Thomsen's strategy to build a global company was his knowledge of Chile:

> *This was a combination of my knowledge and our strategy. I've been travelling once or twice a year to Chile between 1990 and 2000 and I have made a lot of business friends there. I've been visiting farms, I've seen the whole process of how business was developed, I've seen the very good conditions you have from Mother Nature and, in addition, I was also amazed of the openness with which you would invite investors to participate in the business.*

The company strategy pointed toward getting a bigger share of the global salmon market. The European market was to be supplied by Norwegian based farms, but the Japanese and the U.S. markets were targeted using Chile as a platform, most obviously taking advantage of Chile's free trade agreements. In 2000, the company was finally listed in the Oslo Stock Market as convened, and once they obtained the money they set off to invest in Chile.

In order to make it possible, Mr. Thomsen travelled to Chile to talk with his many "business friends" including Sr. Ross. He studied over 20 companies for over one year and after many personal negotiations with their owners and controllers, he finally bought two of them. He took over two mid size Chilean companies and merged them under the name of the mother company 'Northern Seafood', keeping the Chilean managers and workers. This was the first multinational Norwegian company of many to come.

Before 2001, ownership of fish farming companies operating in Chile was mainly national, but the arrival of Northern Seafood coincided with an increasing presence of Norwegian companies. It can be said that once Mr. Thomsen landed in Chile, his company's operations took off on a global scale.

Sr. Ross was also taking important decisions at that time. By 1999 the international salmon prices were falling and the optimism of unlimited growth for Chilean fish farming began to fade away. Moreover, the risk of a geographically concentrated industry[12], mainly located in the Region X was showing its conflictive consequences. The increasing number of fish health outbreaks and harmful algae blooms meant big losses for the activity, the environmental opposition to salmon farming was stronger and linked to global networks of resistance, the spatial competition among companies increased and sea site concessions became speculative. Despite the drop of global salmon prices, the companies based in Chile doubled the bet. More than ever, the companies' projections pointed to expansion towards the Patagonian fjords and islands of Region XI as a mechanism to decompress the initial area of production. Taking production south was also the official discourse of the Salmon Farming Producers Association. The rising expectations created a veritable race among companies, including the multinational players, to get as many aquaculture concessions in Patagonia as possible. But, as the sites were located in extremely isolated areas, the lack of infrastructure was a major constraint for salmon farmers to materialize this territorial expansion, hence, for a short time everything became speculative and expectations seemed frozen.

But Sr. Ross's early landing in the Patagonian fjords gained him important knowledge about the region's business logistics, which was crucial for quick re-positioning. Although 'South Pacific' processing plant and headquarters were based in Region X, the facilities they already had in Region XI became important practical assets for carrying out fish farming under isolated conditions and made Sr. Ross an important actor in rethinking the business. He drew upon both contingency and experience to assemble a network of technological change that included his Norwegian connections and entrepreneurial skills. Under market constraints of falling prices, Sr. Ross's decisions were different from those of average companies: they were not about how to make his company grow, but on how to keep his customers satisfied while maintaining size, and how to strategically provide the services others players would need in order to expand operations in Patagonia. The answer for both was technology-hunting, but surprisingly the driven concept of change was quality.

Sr. Ross regularly travelled to Norway in search of new technologies and to stay in contact with his Norwegian friends, among them Mr. Thomsen. A great deal of this technological exchange occurred at a yearly event that has become an obligatory passage point for both countries salmon farmers: the aquaculture fair AquaNor held in the city of Trondheim during the

Norwegian summer[13]. The exchange is not reduced to technology, but includes seminars, courses and fieldwork visits, a trade practice that undoubtedly strengthened the social ties among salmon farmers and made cross national business networks effective. In some of these journeys to Norway, Sr. Ross, with the idea of improving quality, paid attention to two inter-related technologies that would be decisive in the expansion to Patagonia: the live-harvest system, better known as the *well-boat*, and the live-slaughter system. The effectiveness of these joint technologies in terms of food quality improvement, the adaptations made by Sr. Ross to the Chilean conditions and, above all, the importance of controversies and contingency around the projected expansion to Patagonia, constituted the core of a socio-technical network that had, as an effect, a new regional configuration of Chilean salmon farming. How the well-boat technology became the hinge of a new region is the focus of the next intermezzo.

Intermezzo on well-boats: the fish carrier

> *All projections double the production level in eight to ten years, which means having an industry in the Region of Aysén (Region XI) the same size as we now have in Region X. The changes that would imply are enormous in terms of infrastructure of communications, airports, docks and basic services; investment in on-growing facilities and hatcheries, laboratories, etc; creation of social services and human settlements; demand of wage labour and experts, etc., all of which is of transcendent importance for the future* (CORFO and AGRARIA 2004: 24).

This quote is extracted from a technical report aimed to the consolidation of the "Salmon Cluster" in southern Chile[14]. The document reflected not only the magnitude of the task in an envisioned future, but the discursive steps taken by groups of interests to bring this future closer. However, the discussion of who was responsible for solving the infrastructure problem needed to expand salmon farming south, to the Region of Aysén, was stuck between private and public stakeholders. The promise of regional development led by the industry became dim. Overcoming the lack of infrastructure could take decades. For fish farmers, immediate action was required so that this future was not endangered. The report then continues as follows:

> *This has enormous logistic implications: If we just examine what might happen with the projection of maritime transport. There are two possible future scenarios: with or without a bridge to the island of Chiloé[15]. With the bridge, the continent is extended until Quellón[16]. Without the bridge, it stops at Puerto Montt. In any scenario, but especially in the second, the maritime transport would be far more important for the new aquaculture. According to some experts calculations, in Region X, the average distance for maritime transport is of 47 miles whereas in Region XI is 130 miles* (CORFO and AGRARIA 2004: 24).

This is where the story of Sr. Ross and a very particular boat appears. As we mentioned above, Sr. Ross focused on two interrelated technologies available at the time in Norway that were decisive in the expansion of salmon farming to Patagonia: the live-harvest system and the live-slaughter system. They provided the technological basis to overcome the lack of regional infrastructure. The live-harvest system, better known as the *well-boat technology*, is a boat that pumps live fish onto a boat at the farm site to be transported, under controlled conditions, to an intermediary supply centre near the

processing plant. It replaces previous technologies, which slaughtered the fish at the growing sites and shipped them, often for long distances, to the processing plants with consequential logistic, environmental and quality inconveniences[17]. The well-boat was coupled with a system of live-slaughtering that reduced the time of *rigor mortis*, therefore, producing better quality of fish meat. In addition to production improvement, the irruption of the well-boat in Norway was also in response to rising societal concern on issues of animal welfare.

Back in Chile, Sr. Ross adapted a fishing vessel for use as a well-boat. The technology was so successful that it led to the creation of a sister company called 'South Pacific Wellboats', which so far has built more than 6 ships, each one larger than the previous, equipped not only with the latest technology, but also incorporating many revolutionary applications that stem from practical experience and the new geographical setting. The success of this innovation is reflected in the fact that every well-boat has been contracted at its full capacity, even before launching, by other salmon farming companies in need of live-harvest services. The users demanding the well-boat services are the companies who were awaiting the development of Region XI's infrastructure. This change implied the spatial reorganization of production in an unexpected way. As Sr. Ross said:

> *I think that the real pole of development, unfortunately, will not occur in Region XI, but in Quellón (located in Chiloé Island). The future of the industry is there because it is the gateway to both regions.*

The well-boat technology articulated the expansion of fish farming to remote areas, mostly uninhabited, all of which creates a completely different form of organizing production than in those systems closer to the mainland. The promise of technological solutions for aquaculture was gaining new impulse, thanks to this detour. Changes were not just related to long distance transport of supplies and workers, but began to rely on reduced and well trained crews, living on floating facilities during two week shifts, who were able to operate the mechanization of processes through software and information technology[18].

The head manager of the second largest company of Patagonia, also a customer of the well-boat service, states:

> *The salmon farming business gamble was moving from Region X to Region XI. Instead I have the impression that we are contributing to create the* ***Region X and a half****.*

In other words, the sharp metaphor of Region 10 ½ depicts a double movement. First, a displacement of salmon farming from mainland to a quasi-offshore type of aquaculture, thereby relying on more sophisticated technology and, second, sweeping away the clear cut borders implicit in the concept of Region as the administrative unit that interlocks with the planning of business innovation and regional development (see Map 12 in Annex 3). This does not mean that socio-technical change did not occur, but it took a completely different turn through the contingent combination of actors and the novel arrangements created out of new practices.

The combination of both technologies, in particular the boat designed as a live-harvest system, adapted and put to work in Patagonia by Sr. Ross, his managers and workers,

provoked a complete rethinking of the activity in terms that made a *satellite-like model*[19] of fish farming possible. This model, indeed baptized as such by Mr. Thomsen, implied a strategy of using the facilities already in place in Region X, either Puerto Montt or Chiloé Island, like logistic bases and processing plants, and to narrow the use of the isolated southern archipelago as mere peripheral sites of production.

Epilogue

Sr. Ross's strategy and the well-boat technology helped by-pass the bottleneck produced by the lack of infrastructure in Region XI and triggered a massive stampede of companies to *Las Güaitecas archipelago*, among others Mr. Thomsens's Northern Seafood, who followed the strategy and hired the services of Sr. Ross' boat-harvest system. The entire process was facilitated by Sr. Ross's close relation with top managers of competing companies and his active membership within the Chilean Salmon Farmers Association.

Sr. Ross's strategy for his company then turned threefold: first, to make use of the Patagonian facilities and, given the low salinity of the estuarine waters of the fjord compared to the open sea, aimed to produce fish juveniles that could supply the growing demand of smolts required by the expansion of competing companies. Second, to provide the well-boat services of live-harvesting for the same companies and, third, to keep 'South Pacific' as a medium size company oriented to provide niche markets with premium products, which included a joint venture with an international catering company to produce ready-to-eat dishes. This reorientation was achieved very successfully since he set up a socio-technical network, and through the re-combination of certain elements of contingency, was the first to introduce critical technologies during times of constraint.

In Norway, Mr. Thomsen remained as CEO of the transnational company he had helped launch internationally for a couple of years, but the successive incorporation of new capital, given the monumental investment plan of the company in Chile and, later, in the United States, meant that the Thomsen family lost control. In 2004, he was asked to resign from the position after some financial turmoil and he became a minority, representing his family at the board of trustees. Magnus moved back to his hometown, determined to dedicate more time to his family. Nevertheless, along with his brother, he soon became engaged in a new enterprise that ran experimental cod farms in Norway and sea bass in the Mediterranean. The trials gave way to the creation of a new familial company to enter the commercial phase of these new aquaculture products.

Photo 10. Net-pen technology (fish farm at Puyuhuapi Fjord).

Photo 11. Well boat harvesting fish in the Puyuhuapi Fjord (Source: SalmonChile)

Entrepreneurial networks and technological trajectories: In search of departing points

In the following pages I would like to spotlight three aspects derived from the empirical material presented above. The first remarks on the advantages of using a methodological strategy based on situating actors' own experience through a longer period of time, in particular when studying processes that are primarily concerned with the linkages that interconnect both places although they occurred at different sites such as Norway and Chile. The second aims to understand how actors become entrepreneurs by alternate processes of identification and differentiation, which regardless of marked cultural differences enable them to integrate global trade networks. Finally, there is a reflection on the value of thinking processes of transnational activity formation and industrial expansion in terms of technological trajectories.

Situated actions: on collapsing context and content into one

One of the conceptual choices made in this chapter is a writing style that threads two life histories and economic careers with the explicit purpose of precluding the logic of normative ordering of reality and multiple causalities typical of *contextual frameworks* and *comparative studies*. Let me explain why I have made this choice, given that the chapter delves into processes of entrepreneur-making and technological trajectories of fish farming as they unfold in two different countries, and therefore, comparison and context-definition might sound as obligatory analytical steps.

On the one hand, *contextual frameworks* tend to set social situations within universal logics of temporal linearity and normative scales. In other words, they are presented by the authors as a pre-established ordering of reality in terms of a background constraining or enabling certain micro processes. This approach to *the social* leaves little room to understand the ways actors interpret and order situations, events and contingencies by themselves (Law 1994).

On the other hand, we have all sort of *comparative studies* that tend to rely on structural variables leaving case studies as mere illustrations, seriously restricted by the dominance of the logic of causality. No matter what is under study in a comparative view, variables and processes ended up linked to structural causes rooted in societal functionality or cultural behaviour. Thus, comparison tends to treat case studies as unreliable pieces of disconnected reality if they are not explained in function of endless structural variables, something that may result in overvaluing those predefined categories above actors' courses of actions and emergent processes. In short, the many variables involved in setting different contexts make comparison highly problematic (Moore 2005: 3).

In mainstream sociology context constitutes an indispensable background to make authoritative explanatory statements, in particular when they are used to back up the content (narrative) of a specific case within global/local processes. They have also been sufficiently criticized by alternative formulations of the social where everything relevant to a situation is internalized by those who act entering his/her lifeworld (Long 1992: 20) or made explicit by the intervention of heterogeneous entities including non-human actors (Callon and Law 1989; Latour 2005).

In social situations, context and content, background and foreground, collapse into one perceptual reality that has only relational variations according to where actors stand, but for one observer the social becomes a 'flat world' as Latour (Latour 2005: 16) would call it metaphorically (see also Hughes 1986: 290). This implies that the contextual is experienced and visualized through the instantiation of social relations, specific symbolic forms or concrete material substances. The importance of this epistemological standpoint is that otherwise there would be no need for accounting actors' own mechanisms to 'reduce uncertainty', 'react to external changes' or to cope with the enabling and constraining factors that allow action(ing). The context is incorporated in actor's lifeworlds and therefore the sociologist shall search for a good qualitative account of a social situation or event that integrates the contextual aspect through actor's performance and/or embodied in certain practices and objects. The epistemological and methodological strategy of following actors in an actor-oriented approach has been criticized of being a-historical (Araghi and McMichael 2006). However, this argument overlooks that history can also be treated through actors interpretations and experiences of passed times and memories by tracing their life span as a way of including a larger period of analysis (Long 2001:134) and historicizing a social situation. Situating history trough actors' accounts allows us to unfold the practices that give meaning to their actions.

In my view, the importance of context is not that of ordering the magnitude of explanatory facts from macro to micro – from the most to the least relevant for the studied situation - or making deductions by forcing a comparison of situations that are indeed different. The advantage of a narrative that threads life histories to certain technological developments rests in the empirical proximity of situating the industrial growth of the salmon farming industry in both Norway and Chile, not as an inner force of technological or institutional change, but imbricate with actors' lives and experiences. In this sense, **actions are situational rather than contextual.**

The choice of emphasizing actors' situated experience as they witness and act upon changing events offers a different picture from institutional or political economy analyses. If we agree that all social science is based on interpretations, a focus on situated actions is closer to an empirical understanding of processes where the intermeshing of capital, technology and entrepreneurship are constituted through specific practices and socio-technical networks, and hence *the site of the social* [20] is rather different and relevant for this understanding. Thus, instead of comparing both countries' industrial performance, or viewing them as separate endeavours, the narrative of this chapter traced, in qualitative terms, some of the associations and networks that turned salmon into a global commodity, produced by economic actors of two countries often regarded as peripheral. Thus, it shows how, as a consequence of the work done within these networks, a multiple, but identifiable actor emerges: the fish farming entrepreneur.

Becoming entrepreneur: the process of multiple identification

One of the driving ideas of this chapter is to disclose some of the formative processes of fish farming entrepreneurs as specific subjects that made the functioning of global networks of food trade possible. As we have seen, that is the case of Norway and Chile, where fish farming became a flagship in the always changing geography of food

production through a cascade of entrepreneurial coordinative actions that transformed an experimental activity into a large scale commodity export. Nonetheless, the relevance of studying entrepreneurial actions cannot be relegated to disclose the modes by which they coordinate flows of technology, capital and commodities, but on how there is a performative side that helped to produce "the entrepreneur" as a visible category with material and discursive effects: that is its transformation not only as economic but as political actor[21].

In this sense, is worthwhile to point out that entrepreneur is a category of actor that gained academic relevance with the early work of the economist Joseph A. Schumpeter: *The Theory of Economic Development* (1934). Schumpeter defined the entrepreneur in terms of a creative-destructive force capable of influencing economic cycles through innovations. Schumpeter's work presented a tension between the heroic individual with special skills and the large structural capitalist cycles and therefore has been interpreted as an unresolved duality between agency and structure (Goss 2005: 205). His work left a strong legacy in evolutionary economics that was not translated into a proper research field devoted to entrepreneurship until the last quarter of the XXth century. As Landström pointed out:

> *Entrepreneurship is a relatively new field of research, not more than 20-25 years old – or little more than half an academic career – that during the last few decades has gained extensive interest beyond the usual areas of management studies. As in many other fields of research in social sciences, entrepreneurship research has its roots in the development of and changes in society. In this case we can go back to the 1970s and 1980s, decades during which we experienced huge structural changes in society worldwide, an emerging development of the knowledge economy, and far reaching political changes emphasizing stronger market-oriented ideologies. It was in this context that the interest in entrepreneurship research grew…*(Landström 2008: 303)

By stating the historic emergence of entrepreneurship as a field of research I want to point out that the social valuation of the entrepreneur as a specific actor grew side by side with the increasing importance of economics and management studies. The visibility of entrepreneurs in the 1970s and 1980s required some previous definitions that came from academia and once they were objectified, triggered a process of identification and professionalization that has risen exponentially since.

> *Along with the increase in entrepreneurship has come growth in the number of endowed chairs in business schools; positions in research institutions, foundations, professional organizations; and journals in the field of entrepreneurship* (Thornton 1999: 19).

Indeed, Thornton started her paper entitled: "The sociology of entrepreneurship", quoting that entrepreneurship occurs at significantly higher rates than at any time in the last 100 years (Gartner and Shane quoted by Thornton 1999: 19). This is a daring assertion given that a hundred years ago entrepreneurship had completely different meanings and therefore is not comparable in quantitative terms and it seems misleading to establish a rate for it. This type of statement is not neutral, but part of the discursive construction of a social actor that comes from the social sciences, particularly from a western view on business and management studies.

In the 1990s, entrepreneurship research grew exponentially in terms of the number of researchers, articles, conferences, journals, etc., and accordingly this trend was accompanied by an increasing fragmentation of the field with many parallel "conversations" (Landström 2008: 303), and claims for *"the lack of a unified body of knowledge based on generally accepted social science theories"* (Thornton 1999: 20). Entrepreneurship has been studied in a wide range of activities and the rising figure of the entrepreneur appears as heralding a new epoch where business creativity is shown as having no limits. In addition, the cultural turn to almost every field of research has been rapidly incorporated into organizational and management studies helping to consolidate a new object of research, that of "entrepreneurial culture". We need to emphasize that the western treatment of the entrepreneur as "the" actor of neoliberal economies is both historical and heterogeneous and, therefore, the deconstruction of the specific constitution of entrepreneurial types coming from different activities and localities is a much needed step to qualify these processes.

So what can be learned by the life careers of Mr. Thomsen and Sr. Ross? The point of departure for this interpretation is that entrepreneurship is not a state, being granted to actors with particular relation to a capitalist mode of production, but a progressive and complex process of identification that swings between their capacity to take advantage of market relations and interlocking with personal life projects that unfold and get imprinted in technological and business trajectories. I will refer to this as a *process of becoming*[22]. A perspective on becoming remarks the constitutive and open-ended side of the process (Styhre 2008) in contrast to mainstream, often more deterministic views of entrepreneurship.

To start with, I would draw some remarks that state what this approach is not about. In the first place, understanding the formation of entrepreneurs as a process of becoming does not reduce the phenomena to any 'natural' technological trajectory or business expansion backed up by flows of capital, although it is not to be denied that entrepreneurial action can be inscribed in larger periods of economic cycles and therefore historicized *ex-post facto*. Secondly, the perspective of becoming is not centred on individual attributes and rejects the image of heroic or creative individuals acting through the desire for innovation, a stream of thought that stems from the economist Schumpeter, although individuals do matter in the performance of significant actions with consequences in the configuration of particular types of entrepreneurship. Lastly, becoming is a process that cannot be specified only in terms of engagement to an 'entrepreneurial culture' if not in reference to specific practices by which actors enter or exercise his/her membership to local, national or cosmopolitan elites and activities.

Entrepreneurship here is seen as open-ended and distributed in a network of actions, constituted by micro-processes of quotidian experiences which supply actors with many interrelated and integrated resources, which are put to work through different courses of actions and instantiated through business networks. In other words, individuals become actors, in this case entrepreneurs, through a process of differentiation given by practices that let certain subjects be identified and able to represent their interests.

In a broader sense, entrepreneurship is an effect of the performing of practices of social differentiation which grant certain groups access to resources that otherwise would be restricted such as information, financial capital, prestige, business and political networks, etc. The explanation of why this social differentiation occurs goes beyond the aim of

this chapter, but let me state that there is a wide difference according to the theoretical viewpoints that would interpret the process in terms of class adscription, social stratification or the exertion of symbolic power, in the most well known social theories that deal with it. However, the Norwegian case shows us that the issue of entrepreneurship cannot be only thought of in terms of pre-existent privileged social groups. As Mr. Thomsen ironically pointed out during the interview, remarking his original belonging to a rural non-wealthy family within the more horizontal social organization typical of the Norwegian welfare State: *In Norway, even entrepreneurs are trained as socialists due to our political and educational system.*

In this sense his progressive adscription and identification to the category of entrepreneur did not come only from his family background, which indeed was rooted in the more traditional Norwegian activity of cod fishery, or a medium class education, but by the unfolding of certain skills timely articulated with changes in an emergent activity – salmon farming - and attentive to an evolving institutional setting. His capacity to interpret and modify these changes, operating different sets of relationships, made a difference in the whole organization of the industry that got imprinted in both the trajectory of Norwegian salmon farming and Mr. Thomsen' life history. As stated by Long:

> *No individual, whether a poor urban worker, a peasant to make ends meet, or an entrepreneur wishing to expand his business, has a ready made matrix of relationships and investments that remains constant over time. Even those who inherit businesses or occupations from their parents or other kin must, during the course of their economic careers, reconstitute and modify the sets of relationships involved* (Long 2001: 134).

Long's assertion is particularly true for the case of Sr. Ross where the shipyard business and financial capacity of his father might be wrongly regarded as central for his engagement in salmon farming and the successful adaptation of the well boat to Chilean conditions. This is not to underscore its importance, but what seems less obvious is that there were other networks that played a major role in Sr. Ross's economic career. We should first consider his connection to academic networks that got him interested in aquaculture and later brought him to Norway and, second, the business networks he created with Norwegian salmon farmers. In this case, the set of relationships that constituted relevant networks for Sr. Ross's economic career are significantly those of weak ties identified by Granovetter (1973).

But there is a further object of enquiry when an individual becomes an entrepreneur whose actions have an effect on a global scale. One line of thought could follow some of the globalization theorists that pointed to the existence of a new type of cosmopolitanism formed by an elite who have enough material resources, prestige and 'power' to move with relative freedom across boundaries and context. The argument is not new and is related to the analysis of class formation that focuses on the dominance of power elites in capitalist accumulation (Mills, 1963) or the structural conditions set up by bourgeois elites for the industrial development of particular regions (Cardoso 1971; Lipset and Solari 1971; Cerruti and Vellinga 1989). Despite the validity of this early analysis, the role of elites gained new strength and significance in the wake of globalization theories (Beck 2000; Beck 2004).

However, in my view, the analysis of new entrepreneurship from the perspective of cosmopolitan elite reduces the chance to identify different entrepreneurial styles within invariant frames of cultural reproduction: that of transnational groups of actors that embrace capitalist accumulation. Analyses focusing on the 'existence' of a cosmopolitan entrepreneurial culture take the discussion away from enquiring about the localized process by which the transformation of individuals into economic actors is given by their progressive adscription to the category of entrepreneur through specific practices, and of how they constitute not only central and metropolitan networks, but also peripheral associations that might transfer, adapt or challenge mainstream technologies and entrepreneurial practices.

In this sense, Nigel Thrift may be right when he says that there is a sort of domestication in the way we understand capitalism and entrepreneurial action, through the reproduction of certain academic speeches in which either liberal, critical theory or Marxist political economy are equally guilty of obscuring the performative and always changing capitalist forms (Thrift 2005). The understanding of current capitalism as de-centred forms of organizing production does not de-politicize the issue of capitalist accumulation, but shows us that its performative side is distributed among a wide range of so called grassroots actors.

An empirical approach to the figure of entrepreneur might reconstruct it as a historical composite shaped by the progressive adscription to a distinct category through certain collectively accepted performances of its actors. Even further, that on the basis of this formative process there is a strong component of identification in the way people become entrepreneurs and part of global trade networks. This process of identification does not rely only on life styles, but on social action: what I have called the *identity of action* (Blanco 2009: 94). The identity of action is the dynamic result of social interaction between those who mutually grant themselves the condition of being integrative part of certain activity, a historical period, a locality or region, or a specific social group. This identification stems from the proximity given by everyday practices and is sustained through time by customs. However, the identity of action allows us also to understand how and when changes and differentiation occur sparked by the creative potentiality of human action. Action is constitutive of both the way people identify themselves and the way we place them in categories. Entrepreneurs do not enter the category merely by wearing elegant suits, carrying state of the art IT devices and using a specific economic language. Image is a symbolic element, but emptied of action it is powerless. People become entrepreneurs insofar as the consequences of their actions provoke identification among peers and differentiation from other actors. It is the displayed sets of actions, the ongoing constitutive process through which someone becomes something. Only then does the subject fall into a category (or many). In this view, there is nothing immanent to the actor. Regarding this, Loxley emphasizes the concept of performance in the process of becoming:

> *The resort to the concept of performance is therefore an attempt to put in place an understanding of what we really are. To this extent, it offers an alternative social ontology, one that does not reduce performance to a merely secondary status; and because it asserts that* ***we become what we are only through our actions*** *it also challenges the very categories of ontology, as the [Butler's] critique of notions of fixed identities and essential nature* shows (in bold my emphasis, Loxley 2007: 154).

This is a fair point to acknowledge, because as was shown by the actors presented in this chapter, entrepreneurial practices are not universal, but multiple according to context and site-dependent performances that become accepted and ritualized by material and discursive means. Salmon farming generated certain types of entrepreneurship because they are rooted in the particularities of a specific (novel) activity. In this process, the identity of entrepreneurial action is a minimum point of departure that sparks the very idea of relating to others as peers that enables and facilitates processes of convergence and articulation, like copying technologies or buying foreign companies through "business friends". I must insist that this is a minimum point of departure for a process of progressive identification that facilitates entrepreneurial coordination. Simultaneously it involves multiplicity according to the actors' origins and the courses of action taken over time, so that the differences of becoming entrepreneurs in Northwest Norway or southern Chile are expressed.

The importance of opening the black-boxed category of an actor, and thus not exaggerating the role of identity, is that it leaves room to understand social change and innovation not as causes but outcomes during the process of becoming an entity. That is exactly the difference between focusing on the radical openness of an emergence of any entity, which is a focus on ontogenesis (how an entity is *coming to be*) rather than ontology (how an entity *is*) (Styhre 2008: 107). Becoming and belonging are processes that rely on the dynamic interplay of repetition/convergence and difference/divergence. This dynamic, explains, to a great extent, the forms by which a Norwegian individual – Mr. Thomsen- meets a Chilean – Sr. Ross – and they are able, not just to relate, but to create functional ties based on their identification to a certain activity and also to single out cultural differences, values and styles of entrepreneurship.

The category of entrepreneur becomes meaningful to describe Mr. Thomsen and Sr. Ross only once they acted upon certain situations, helping to create the distinction from other possible identities. This is something that happens both synchronically and diachronically: In the first case when actors are identified by their predominant activity in reference to many others, they could perform at the same time, and, in the diachronic sense, given the changing roles of actors as they unfold over a life time. The first step to this diachronic differentiation was *becoming fish farmers,* given by their involvement in an experimental rural-based activity and their commitment to create and adjust one or various commodities to differentiated types of demand. This process was marked by the consolidation of the net-pen, as a technology that allows the State the standardization of production and regulation but also facilitated the spread of the activity transforming the salmon farmer in an identifiable social actor. The second relevant step was more subtle and centred in their transformation from fish farmers to entrepreneurs, and although there is not a single moment where this happened, the relevance of the constitution of entrepreneurial bodies of representation is worth mentioning. Indeed, entrepreneurial identification takes a significant step in both cases when they enrolled peers to form institutions of corporate representation through their respective fish farmers associations and, later, went beyond exclusively national interest through the creation of international entrepreneurial bodies, e.g. the European Salmon Farming Association (ESFA)[23], the Salmon of the Americas (SOTA) and the International Salmon Farming Association (ISFA). The organizing process of corporate interest was the route in both countries that made the fish farming entrepreneur a visible and valid spokesperson, in particular in relation to the State and later, to a lesser degree, internationally. This is also

the most visible mechanism where entrepreneurs become political actors, since their corporate intervention goes beyond market coordination and includes attempts to influence governmental decisions, inducing counter regulation, lobbying (see Chapter Eight) and counteracting environmental movements. It also frames the relations with other actors such as international peers and local communities. In sum, becoming an actor is a complex process of multiple identification that nonetheless allows setting practices of mutual acceptance and recognition.

On technological trajectories

So far, the concept of technological trajectory has been unreflectively used within this chapter. Hereafter, I would like to draw upon what is meant by it, in particular when linked to entrepreneurial courses of actions.

First of all, do technologies have trajectories? In the early 1990s, Bijker and Law posed this question in the introductory chapter of one of the seminal compilations of Science and Technology Studies (STS) (Bijker and Law 1992). The inquiry posed an implicit critique to mainstream views on technology mainly coming from evolutionary economics developed since the works of Kondratieff and Schumpeter. The neo-Schumpeterian economists basically deepened the original idea that capitalist economic cycles were determined by a reduced number of key technologies that create the basis for both an expansive period of accumulation and processes of path dependency for a subordinate set of related technologies, something they labeled technological or techno-economic paradigms (Dosi 1982; Nelson and Winter 1982; Freeman and Pérez 1988). They defined technological trajectory as the pattern of 'normal' problem-solving activity within this broad, but restrictive technological paradigms (Dosi 1982).

More than 20 years of cumulative empirical evidence developed within the constructivist approaches of STS have demonstrated that *trajectories* do not necessarily relate to a linear pattern or path-dependent developments of technology, such as stated in evolutionary economics (van den Belt and Rip 1987). Indeed, the work of the historian Thomas Hughes (1983) appeared as the basis of an early critique of the deterministic and evolutionary approach and with the concept of *momentum* gave trajectory new meaning, installing the idea that for certain technologies reaching widespread acceptance is a socio-historic construction that requires an enormous mobilization of resources and actors' articulations of the new materiality. Central to his critique of previous views of technology was the overemphasis given to *context* as a privileged set of high-level abstractions with overarching explanatory power and, instead, he replaced it with the constructivist approach that situates the locus of technology in the messy space of social groups that negotiate its production and its meaning (Hughes 1986: 283).

But assuming that all constructivist approaches would do better in studying the path followed by certain technologies, 'sociologizing' the concept of trajectory is not quite right either. It is perhaps interesting to take someone else's work as a counterpoint to make a clear distinction with the concept of technological trajectory I will propose later. Hakon Andersen, a Norwegian scholar, published in 1988 an article entitled 'Technological Trajectories, Cultural Values and the labour Process' (Andersen 1988). At the time when the main constructivist STS approaches were being forged, Andersen embarked on building the 'contextual history of technology'. In order to understand the

conditions where a particular technology was developed, he made a comparative study in two places, Norway and the United States, by focusing on the institutional setting of its production[24]. According to Andersen, the technology in question and the institutions' developers were shaped by certain contingencies and patterns from the 'inside' technology and the 'outside' environment. He folded these shaping elements into the term 'trajectories', either technological or institutional, according to predefined categories. He prevented the reader from seeing such trajectories as determining the shape or design of the new technology, thereby leaving room for human action and choice. Nonetheless, his conclusions ended predictably pointing out that the differences in context were the aspect that produced different results and therefore limited actors to the role of placeholders instead of agents.

The use given by Andersen to the historical comparative perspective in order to address the social construction of a particular technology in two places fell in the larger contextual-frame explanation that was mentioned and criticized in previous pages. That is, the need of drawing upon a complex background of outside forces (like politics, economics or culture), in order to explain the 'real' determinants of the processes under study, an explanation that does not takes us any further. The actor's arrangements described in the empirical part may only seem to have a secondary role, the one granted to placeholders that are following cultural rules and being framed by historical and institutional settings. This, in my opinion leads to a sort of zero sum effect. According to this perspective, actors might play a role, but it is finally the context that determines actors, limiting his/her interventions.

Fortunately, since the early 1990s, a wide range of propositions have emerged from the study of technological change, in attempts to overcome both the implicit determinism of evolutionary economics and comparative studies, as well as the need to recall the infinitely possible factors when thinking just in terms of context-related-causality. The empirical case and the writing style of this chapter have followed this track by describing the contact zones of fish farming between Chile and Norway and spotlighting issues of constituency instead of causality.

What then is the usefulness of keeping the concept of technological trajectories? I positively think that its conceptual and metaphoric value stems from the opportunity of re-interpreting the definition of technological trajectory in terms of an array of *actors' orientations,* which are built through and imprinted in material and discursive records. Thinking of trajectories in terms of orientations helps us to see actions as embedded in a historically situated perspective that swings between processes of identification and differentiation of actors as they relate to heterogeneous materials and context. The conceptual value of *trajectory* is that it specifies the collective potential of actors *plus* technology, that is the work of an equipped humanity producing qualitative differences which get imprinted in material records over a period of time: technological devices, policies, documents, companies, trade networks, etc. Those orientations, hereby called technological trajectories and not actors, are what helped to create disclosive space for action that was not open before (Spinosa et al. 1997), but in order to be effective require a certain consciousness of belonging to a group that relates to materiality (technology) in a particular way. Only in this sense a technological trajectory can give meaning to both collective and individual performance according to practices that fit within a negotiated range of intelligibility during a certain period. If we need to think of an image to represent these orientations they might look better as a spiral and not as a trend or cyclic

line, because regardless if the volutes go upward or downward, something that can only be judged in reference to one point, they indicate relations, proximity or distance among actors within a larger concatenated process.

In the case of salmon farming, the technological trajectories and the performance of particular companies that went global in their scope of action cannot be dissociated from the coordination of life projects and course of actions taken by entrepreneurs whose effects are imprinted in the design of new technologies, companies' performance and mergers, new products, travel, business meetings, and personal ties. These trajectories are distributed in a network of actors and artifacts that became entangled during the making of the activity.

Retrospectively speaking, not everything looked smooth and easy for Mr. Thomsen and Sr. Ross, and therefore there was hardly one single trajectory that could guide their decisions, rather a number of identifiable events had an effect on creating opportunities and constraints which were consequently anticipated, accommodated or resisted by fish farmers and entrepreneurs. Outstandingly, the unintended consequences of an open phase of experimental activity were more effective in creating space for new forms of institutionalization and technical change than plain institutional stimulus. Indeed, the net-pen technology is an extraordinary example: a replicable device that became a milestone of confined production facilitating the diffusion of fish farming worldwide, it also became the unit of state regulation and preceded the fish farmers organization. After the open experimental phase, the Norwegian salmon farming industry turned into a highly regulated and centralized system, both in terms of state control and fish farmers' organization of sales, a combination that led to an extended crisis and market failures. Conversely, the Chilean salmon farming industry evolved under a liberalized regime based on an experimental phase that relied on adapting foreign technologies and later, a high rate of expansion that started to set its own limits due to spatial competition, environmental and cross-sectoral opposition. And right there, the well boat technology opens a completely new arrangement of production that allowed geographic expansion to previously unthinkable places in the Chilean Patagonia.

In short, the trajectories of a given technology or set of technologies are actors' adaptations and re-signification of certain materiality to a novel context or new interventions, particularly when it leads to a widely recognized re-organization of production, labour or everyday life. The common lesson from both, an actor-oriented sociology and STS studies, is that any industrial technological development can be traced to how it has been composed by its actors and therefore its trajectory, can be re-interpreted as the creative and open-ended responses to changes and not a deterministic force of path-dependency of evolutionary economics.

Conclusion

This chapter tackles a persistent debate in social sciences of how to treat history if one aspires to account for situated practices while not overlooking the larger contextual background. It is less about what should be incorporated if one is trying to put social situations into the larger frame, something which is not so problematic if the context of these situations is defined by actors practices, but of how to historicize avoiding an

evolutionary approach which would predetermine actors' lifeworlds. I have attempted to prove a different track by examining part of the fish farming history through stories; two interwoven narratives of entrepreneurs' life histories, the performance of their companies, and two path breaking artifacts, which reflect a certain shared course of actions which in their time were shaped by contingency rather than a pre-defined context. The cases of Mr. Thomsen and Sr. Ross refer to the coupled effect of being participants in long term processes of both activity and identity formation. It is the sustained performance of certain practices that *creates* activities and categories of actors, something that was conceptualized as the *identity of action*. In other words, Mr. Thomsen's and Sr. Ross's economic careers are a constitutive part of fish farming and of the emergence of the salmon farming entrepreneur. They were able to sort out or accommodate alternate processes of regulation and de-regulation coming from their particular institutional settings[25] and a series of market-related events. They also constituted and coordinated networks that have spread salmon farming and facilitated contact zones among the two world largest aqua-food industries.

In sum, this chapter intends to broaden the understanding of the industrial development of salmon farming in Norway and Chile as a process of increasing technological exchange constituted by the articulation of entrepreneurial action. This is not to suggest that the two life histories and the artifacts alone can explain the functioning of the aquaculture industry as a whole, but positively to affirm that if we excluded the human and non-human actors involved from this account we would surely have a completely different trajectory. They are constitutive agents of a larger process and of long distance actions.

I have also pointed to the possibility of identity formation based on certain common actions undertaken by entrepreneurs and fish farmers. Although identity should be seen as a minimum point of departure it is in fact an important source for subsequent differentiation in the formation of the industry. It is by means of creative courses of actions that fish farming practitioners endlessly open space to constitute new paths, outcomes and networks. The idea of becoming an actor such as an entrepreneur emphasizes that they are not an entity but the result of an open ended process of identification.

I conclude by pointing out that technological trajectories might be understood as a situated course of actions which are constitutive of social arrangements and integrated to actor's lifeworlds. The aim is to gain a sense of how the constraining and enabling factors have resulted in diverse strategies, differentiation, accommodation and identification. The value of this approach must be found in the methodological treatment of industrial formation. Most of the time companies and industries tend to be treated as black boxes, which obscure how they have been forged and shaped by people, non-human actors, such as technological devices, and historical contingency. In this sense, technological trajectories should be interpreted as actors' capacities for internalizing the 'contextual' and transforming it by creative means into fragmentary parts of their life projects, sometimes successfully, sometimes not, but generating effects which lead to novel arrangements, technologies and organizational forms.

Notes

[1] A first version of this chapter was presented as working papers at the Summer School of the Research School for Resource Studies for Development (Avaria et al.), in Wageningen, The Netherlands in June 2006. Two weeks later, I presented a second version at the 18th Annual Meeting of the Society for the Advancement of Socio-Economics held at the University of Trier, Germany.

[2] The previous chapter has been complementary to this aim insofar it presents the process and techniques that helped to 'domesticate' salmon and trout until convert it into a commercial activity.

[3] The specialized press used was mainly aquaculture on-line news and reports coming from the Norwegian Intrafish (http://www.intrafish.no/global), and the Chilean Aquanoticias (http://www.aqua.cl) as well as its paper version Revista Aqua. I also made use of the Chilean aquaculture bi-weekly newspaper: Periódico de la Acuicultura.

[4] In this point I'm referring to Svein Frisvoll to whom I'm grateful for sharing valuable information.

[5] Information extracted from the documentary film *Den blå revolusjon* by Lasse Thorseth and the Norwegian Seafood Council, 2003.

[6] This change was pioneered by Fundación Chile, a private-public foundation aimed to transferring technology for the benefit of export-oriented activities. 1979 is highlighted by many as the year where the experimental phase ended and the first company using steel net-pens to grow salmon was successful and the use of that technology became widespread.

[7] One of these illuminating accidents is narrated by the Norwegian architect Karsten Vik, when along with his brother; he carried out some research on salmon in 1962. They bred a separate brood stock of salmon in a seawater pool and when during the next season they took them out for the stripping off process they discovered there were two rainbow trout among salmon. The trout bred in salt water presented a different shape and were larger than those bred in freshwater pools, a situation that convinced the Vik brothers that trout could be adapted to seawater conditions with optimal results (Extracted from the film *Den blå revolusjon* by Lasse Thorseth and the Norwegian Seafood Council 2003).

[8] According to Forster, this technology is a low-cost way of managing large volumes of water for aquaculture. It consists of a cylindrical or box-shaped netting bag suspended from floats in a sheltered body of water where currents, created by wind or tide, cause water to flow through the net meshes. Cage designs vary widely and they can be made of different material, but they all adhere to the same basic principle (Forster 2002: 578)

[9] During the interview Mr. Thomsen never refers to fish farming as any other activity than business.

[10] In Chapter 5, I have mentioned the importance of the Canadian International Development Agency (CIDA) in funding the aquaculture research agenda of this School of Marine Biology.

[11] In 1991, at the peak of the crisis, a multi-stakeholders committee was appointed by the government to analyze its origins and to propose solutions. The crisis was explained mainly due to excess of production leading to a price-fall and the failure of the Fish Farmer's Sales Organization (FOS) that had a monopoly since 1978 of the first-hand trade of farmed salmon in Norway. However, the committee found that the underlying reasons of the crisis were governmental regulations of the owner-structure and the size-restriction which, by means of pursuing other goals different than the producers have, were altering the functioning of the market. The committee strongly recommended the need of deregulation (Norges Offtenlige Utredninger 1992).

[12] The 'positive' view of geographical concentration has been developed following Michael Porter's idea of industrial cluster as it was mentioned in Chapter Three. The Chilean Fish Farmer Association

(SalmonChile) supported by business school scholars have welcomed the idea of the "Chilean Salmon Cluster". For more about the salmon cluster see the works by Montero and Vergara (Montero 2004; Vergara et al. 2004).

[13] A twin event was created in Puerto Montt, Chile, in an aquaculture fair called Aqua Sur which is carried out every March and counted with most companies' representatives.

[14] The importance of the cluster approach to salmon farming was introduced in Chapter Three.

[15] Chiloé is the largest island of Chile and it is located in Region X. The east side of the island faces the inner sea which provides many suitable places for salmon farming. The island is connected to the continent through a 30 min Ferry trip but, because of its increasing economic importance, the central government launched an international bid to build a 4 kilometres bridge. In 2007, the construction of the bridge was finally discarded for financial reasons.

[16] Quellón is the southern city of Chiloé Island (see Map 2 in Chapter One).

[17] The early manual systems and its effects in both fish quality and the organization of labor was described throughout the first harvesting of Puerto Cisnes in Chapter Four.

[18] See the ethnographic description about the social organization of work on a pontoon in Chapter Seven.

[19] The denomination of *satellite-like model* of production for fish farming was given by the Norwegian entrepreneur Mr. Thomsen during interview in specific reference to the strategy for the expansion to Patagonia led by Sr. Ross but followed by many companies operating in both X and XI Region of Chile.

[20] By this expression I mean the empirical site, which comprises place, time and situation, where what we called the social could be observed and described (see Schatzki 2003).

[21] This point will be deepening in Chapter Eight that delves into networks of lobbying. In this chapter the capacity to overcome a trade barrier imposed by the EU to Chilean salmon results from an articulation of State agents, entrepreneurs and trade and legal experts.

[22] Alexander Styhre applied the idea of becoming to the case of entrepreneurs by using the concept of *transduction*. He was following the French philosopher Simondon who coined the term transduction "to denote the entire process of individuation into a metastable unit". Simondon focused on the radical openness of an emergence of any entity, that is a focus on ontogenesis (how an entity is coming to be) rather than ontology (how an entity is)(Styhre 2008: 107).

[23] The European Salmon Farming Association was later transformed into The Federation of Aquaculture Producers (FEAP).

[24] Andersen made a comparative research of *Numerically Control Devices* (NC) in two different 'contexts'. He compares the development of NC technology at MIT (with funding of the US Air Force) to the development of an NC steering unit, and later computer programs, in a public research institution in Norway, with public grants for doing industrial research (Andersen 1988: 465).

[25] By institutional setting we must understand a set of discursive as well as embodied collective practices performed in particular sites that frame the interpretation of actions during certain period of time.

7

A day with a crew:

Salmon farming as workers' practices

> *To be human is to experience one's place in the world as a special way of enjoying both the things and the people that surround us* (Edward Reed 1996: 125)

Thus far, we have reviewed the constitutive practices of different realms of social action in the Patagonian region. Progressively, we have disclosed and deepened those nexus of activities that were composing salmon farming as one particular realm of distinctive characteristic. This chapter aims to present ethnographic material that shows aspects of the social organization of labour at different sites of the salmon production process. The accounts are based on participant observation, interviews and visits to 'GrandSalmon', a company with headquarters in Puerto Cisnes that has operated in the region since 1989. Although each company has its own forms of organizing production and some aspects may be rather idiosyncratic of GrandSalmon, I'm confident it represents the general pattern of the industrial organization of aquaculture in southern Chile, since I was able to compare practices while visiting at least two other companies as well as some facilities in Norway.

The organization of production and the production of organization

Most salmon and trout farming companies in Chile are organized following a vertical integration of the phases of production and of forward integration to sales and marketing. At the beginning, companies also took care of the production of fish food, the main component of backwards links to supplies. However, since the mid 1990s, the industry has carried out an intense outsourcing of both services related to production and of backward integration to supply (Bjørndal 2001; Phyne and Mansilla 2003; Katz 2004; Montero 2004; Våge 2005). In short, the three phases of the production chain are as follows: 1) Hatchery and fresh water smolt-rearing facilities – *Piscicultura* ; 2) Sea water fish farms – *Centros de cultivo*[1], and 3) Processing plants – *Planta de proceso* - for slaughtering and packaging.

In spite of the trend to vertical integration, there are medium size companies that have specialized in one phase, particularly hatchery, as well as some major companies that offer processing services to smaller ones in order to make full use of their industrial capacity.

In the case of 'GrandSalmon', the company treats these stages as separate units for managerial design. Each unit has its own staff and must be accountable for its inputs and outputs. Nonetheless, they all must follow centrally designed planning and timing to deliver its intermediate product to the next unit. Briefly, the circulation of salmon and trout at production stages is as follows: After spawning and hatching the fresh water fingerlings go to a process of adaptation in salty water where they become *smolts*. Smolts are salmon that are physiologically ready to be transported to continue their growth at sea. This process takes about 12 months. Fish are transported to sea water farms where they are fed until they reach commercial weight. After 9 to 13 months, depending on the species, fish are harvested and sent to the processing plant. The amounts of fish to be harvested are set in advance, according to a schedule designed to satisfy demands specified in contracts with wholesalers and retailers around the globe.

The variety of processes and services needed for the circulation of fish at these stages have been increasingly outsourced. A myriad of related jobs and activities compound the larger picture: maritime and terrestrial transport, fish food suppliers, diving, fish health services, net repairing, surveillance, research and certification services, banking and accounting, among others.

Some of these activities will be described throughout this chapter from the perspective of a site I had the opportunity to explore with more ethnographical detail: the salmon workers at the floating platforms. In this chapter, I take the seawater fish farm as a central unit for understanding the contemporary practices inside the production chain. I also suggest that this site depends largely on links to processes outside the salmon chain and with an understanding of the workforce that rests on processes of sociability, contingency and creativity that exceed the standardization of production and labour. I want to remark, however, that I did not grant seawater farms any privilege beforehand over other sites, but I felt that this was a vantage point from which I could make sense of the whole process in an ethnographic manner.

There is more than one way of organizing seawater fish farms, a variation that depends mainly on the company's geographical strategy of production. The further the farms are from inland facilities, the more technology intensive the production process becomes. At the seawater fish farm stage, I experienced that social life of salmon farming occurs crucially in three sites: 1) conventional seawater fish farm, 2) the workers' camps and 3) pontoons. Moreover, all these sites entailed processes that are planned and supervised by professional teams from a land base headquarters, whose staff's stories are also central to the assemblage of the following narratives. The differences and articulations among sites will be underlined in the following section as I, as a researcher encountered them in the field. By the end of the chapter, I present an analytical enquiry about what these sites and practices imply for the social organization of production and the constitution of the salmon farmer.

Villegas: a workers' camp in the Patagonian fjords

I embarked for Villegas on a beautiful sunny morning, an enjoyable rare event in a region where it can rain up to 5.000 mm a year. The day started one hour before at the company headquarters, where I was given an employee´s red and blue thermic suit, white rubber boots and bright orange life jacket. Everything perfectly to size, which made me think that receiving visitors was a common practice. In short, I was dressed up as one of the GrandSalmon crew. I left the headquarters, not before noticing that the personnel who did not know what I was doing and saw me dress up as a worker, were wondering about me.

In the 10 minutes walk along the beach from the headquarters to the port, I joined a sparse caravan of several other workers dressed up and carrying backpacks as I did. I could easily place them as working for some of the other three locally based companies, because they either wore clothes of different colours or their life jacket was branded with another logo. The wharf looked rather small against the cliff that stands out as an impressive shelter. It is composed of a single wooden pier and a slope made of concrete that, according to a big governmental advertisement – *gigantografía* - was refurbished recently to favour small scale fisheries. A towered house serves as office to the artisan fishermen administration and, shadowed by the cliff and behind glass, there is a figure of San Pedro, the patron saint of fishermen. The panoramic view of the wharf brought to my mind the complaints of some fishermen I met in town saying that the port, originally meant for them was increasingly being used by salmon farmers. Despite the validity of the complaint, the scene was rather quiet and it seems that boats and movements related to each activity were coexisting with ease.

At the pier I joined Roberto, Farming Production Manager and Andrés, the skipper of the Fiordo III, the company's main motorboat. It is a cabin boat for up to 12 people made of fibreglass and propelled by a butane outboard motor. The boat was the means of transport to communicate the headquarters personnel with the sea water facilities which were spread all over the Puyuhuapi fjord. The Fiordo III, was one of two small watercrafts – *lanchas* - that the company did not sell when the outsourcing process took place (see Chapter Four). Nowadays, the transportation of workers from inland to seawater farm sites is undertaken by a former fisherman who has created a small sea transport business.

I had met both Andrés and Roberto a week before, when I was taken on two introductory tours in order to become acquainted with the production area, so they were already aware of my research purposes. During our journey to Villegas, we talked about the ever changing conditions of navigation and I listened to many stories of stormy weather in open waters, particularly when crossing the Moraleda Channel. My attention was then caught by the sight of a sea lion colony lazily lying on a small rocky island. They explained that sea lions were a hot issue and a big headache for the company since they tend to attack fish farms in search of food.

> Andrés was born in Puerto Cisnes and is one of the few locals who remained with the company. He was fisherman before working for the company, an activity that makes him extraordinarily valuable, due to his skills as a local seaman. Andrés, also known in town as 'el Culebra' (the snake), was also a great storyteller and since we become acquaintanted, was always a good source of information. Roberto is a 28 year old veterinary from Temuco, a city 600 km north, who studied in Santiago. He began working at the company one year ago doing an internship as Seawater Farm Assistant and was recently promoted to Farm Production Manager of the whole Area of Puerto Cisnes, which means being in charge of supervising 7 centros, which will eventually go up to 15. He married one year ago in his hometown, but just recently brought his wife to the village.

We arrived at Villegas after 45 minutes of navigation heading south of Puerto Cisnes along the Puyuhuapi Channel. Villegas is a salmon farming camp where the workers of up to five *'Centros de Cultivo'* – hereafter interchangeable with Fish Farm – can be accommodated. From here they travel daily to the respective seawater farms. Located in the small bay of Isla Magadalena, the camp is surrounded by a steep forest covered hill. From the boat I could see the whole complex which was made of two big buildings, one of them centrally located in front of the pier and, on the left of the foothill, the largest, a two storied building. At the right side of the pier there were five to six houses of medium size and one, the nearest to the pier, surrounded by big antennas. Constructions were made of wood, following the local Chilote-style of architecture. At a first sight they seemed quite new and to be maintained in very good condition. The overall view was surprising, taking into account that in those isolated landscapes you hardly expect to see any buildings.

We arrived after 10 a.m., so the camp was almost empty and just a couple of dogs were hanging around. I was taken to the central building that it happens to be the catering area. While drinking coffee I was introduced to the camp administrator. His name was Luis, a young accountant of about 28 years of age, who later told me that he came from Coihayque, the regional capital. After coffee, he led me to one of the houses where I was going to stay. I was to share housing with the personnel of 'Centro Marta', one of the three *centros* that were functioning this season. Andrés and Roberto left at this point to continue navigating to visit the farms.

After placing my stuff in one of the rooms, I inspected the house. It was a two story house with three rooms, fully equipped with all the facilities one could expect from urban lifestyle: kitchen appliances, microwave, central heating, laundry room, spacious bathroom, comfortable sofas, satellite TV, etc. The living room had an impressive view of the fjord with the Marta volcano as a magnificent background. The first floor was only used as an entrance hall where you could take off coats and hang wet suits after work.

Then, I followed Luis through the camp walking over wooden walkways wrapped in fish nets.

In winter, I mean year round [he laughs], the soil is a sponge – soil that is locally known as mallines – so the steps get slippery. Wrapping the walkway steps with fish nets, like local fishermen do, was the solution to avoid falls.

He went on to explain how the camp was 'organized'. The house where I stayed was one of the 4 houses meant for the professional staff of each Centro, normally one Chief – *Jefe de Centro* - and one assistant – *Asistente de Centro*. The fifth house was his. Next to the catering area there was a small building with several two-bed rooms that were meant for the platform supervisors – *capataces* - of lower rank than the professional staff. The house with antennas was an office with three computers, one for each *centro*. They were connected to internet through satellite. Finally, crossing along a sandy football field, was the big two story building I had seen from the boat. That was the barrack for blue collar workers, composed of two wings with several bunk beds, rooms for toilets and common shower areas. I soon realized that everything was hierarchically segmented according to ranks and duties.

The complex has 24 hour electricity and heating from a big fuel oil generator. There was no telephone and all communications were done by radio. All supplies – oil, gas, food – were provided on a weekly basis from Puerto Montt and arrived on La Queulat, one of the big cargo boats known as *barcazas*. Food was provided three times a day by an outsourced catering company and cleaning services were done daily by outsourced personnel. This season the camp was inhabited by 40 workers. Five of them are women, one of whom is a Farm Assistant, another is an environmental engineer doing a research internship, and the other three are senior year students from the vocational high school of Puerto Cisnes who were doing a final internship in order to become aquaculture technicians.

At lunch time, around 12:30, the crews arrived from the three different *Centros*, each in their own motorboat. I was introduced to *Jefe* Claudio, the professional in charge of Centro Marta, who had been previously informed of my research stay. We had lunch together, served by two cooks who belonged to the outsourced company. I spoke to him about the objectives of my research and how it was important for me to be as integrated to the normal working routine as much as possible.

Claudio is a 35 year old marine biologist, who had come from Concepción, the third largest city in Chile and had worked in salmon farming for nearly 10 years. He got married to a local woman of Puerto Cisnes, where they currently live and have one small child. Though quiet at the beginning, he was always very supportive to my, often difficult to explain, research. He was reputed at the headquarters, and this was later confirmed by his crew, as one of the most experienced, but strict salmon farming chiefs.

Photo 12. View of Villegas camp, Isla Magdalena

Photo 13. Fish farm crew on their daily way to work.

Photo 14. Fish farm crew at the boat on their daily way to work.

Photo 15. Fish Farm

'Los muchachos' of Centro Marta: a conventional Seawater Fish Farm

> After lunch I joined Claudio and four of his crew members at their boat – I was told that some remained at the farm feeding the fish in a lunch shift - *los turneros*. He introduced me pretending I was as a new member of the team. Getting to Centro Marta took us half an hour. The weather was pleasant, hence the trip along small islands and inlets was enjoyable. Soon we had some platforms in sight but I was quickly told that our Centro was the farthest. Our motorboat was of a different kind than the previous *lancha*. They called it *panga*. It was also made of fibreglass but without a cabin, broader and more solid than the Fiordo III, and with a butane outboard motor and couple of butane cylinders tied to deck. Every cylinder is an accurate measure for a certain amount of fuel autonomy, but the extra rows tied to deck show that running out of gas is not a rare event. The external border of the *panga* was covered by a thick strip of rubber, to protect the boat from the often rude manoeuvres of approach.
>
> Finally, we had Centro Marta in sight. A Centro consists of two modular floating platforms – called *módulos* – separated from each other for about 300 hundred meters. At a first glimpse they looked like rectangular floating cages, supported by a metallic structure and surrounded on all sides by 2 meters of high red coloured netted fences, as protection against sea lions attacks.

Each platform is composed of up to twenty galvanized steel framed net-pens[2]. Each net-pen is 30 square meters, 15 meters deep and contains circa 30,000 fish. One Centro can hold up to 1.2 million fish. Each net-pen frame is covered by a net that hangs 1 meter above the sea surface, as protection against the birds. The net-pens are connected by metal walkways with joints made of rubber that allow the structures to twist and move with the movements of the waves and tides. The platforms are firmly wired to cement blocks lying on the seabed called *muertos*. In addition, a system of plastic buoys with high buoyancy capacity is incorporated to prevent the daily movement of tide variances. In between the *módulos* there is a floating warehouse where the fish food is stored and pumped by air blowers to the platforms. One *Centro* team is formed by 12 people, but normally just 10 are 'in' and the rest, due to the shift system, are off duty. In addition to one Chief and one assistant, each *centro* has three *capataces* - module supervisors - and six *alimentadores* - feeders.

> The *panga* pilot – called *panguero* - approached the boat skilfully, stopping first at the warehouse where one crew member got off and then to each of the two modules where the rest of the personnel split. Once we disembarked at one of Marta's platform, Gómez, the *capataz* in charge of the module, asked me to dip my rubber boots in an iodine solution and wash my hands with a disinfectant gel from a plastic dispenser, a sanitary standard set up by the company called ´all in all out´. Then he took me to the central walkway and recited a memorized welcome speech and the company´s platform security protocol. Then, everybody got back their routine, with the exception of *jefe* Claudio who stayed beside me and explained how the Centro functioned and made me familiar with the

working terminology. The Centro was breeding trout this season and we were in the middle of a process that normally takes 9 months. It was January at the peak of the growing cycle, the season with the longest daylight. Trout are voracious animals and they can feed all day long, with only short intervals, during summer. Regarding this topic the logic of crew members is quite simple: the more the fish eat the shorter the time until harvest. Less time spent at the farm means fewer probabilities of health outbreaks. More fish harvested means a higher monetary bonus for the team.

Around 19:00 we returned to Villegas and had dinner. Some workers stayed a bit longer around a large screened TV, smoked cigarettes or played table tennis, while others went to their bedrooms. Claudio and I went to our house. After a while we received the visit of Gómez, who was carrying a pack of *yerba mate*[3]. Cheerfully, Claudio said:

> *Quiubo Gómez, ya era hora de ir cebando el mate che (What's up Gómez, it was already time to prepare mate)*

Mate is an infusion prepared by steeping the dry leaves and twigs of the evergreen mate tree in hot water. It is a stimulating, bitter beverage that can be infused several times. *Mate* is an extended social practice in southern Chile. Drinking mate is something you normally do in company, indeed, there is a single hollow gourd with a metal straw – also called *mate* – that is always filled by the one who prepares it and always passed to the right. Saying thanks means that you do not want more *mate*.

We sat at the living room and Gómez started to prepare the infusion – *cebar el mate* – which means heating the water to 70º or 90º C, but not boiling it, steeping the herbs, spitting out the first and most bitter sip, and checking that the straw is clear. Then, the gourd starts to go around and conversation begins. They have a good laugh explaining some teasing I did not notice during the afternoon. It happens that Marta's assistant, Genaro, was off duty and crew members thought he had quit the company and I that was his replacement, the new Centro assistant. Claudio, who knew what was happening, started the gossip up by introducing me as a new member. So during the whole afternoon the team was having a hard time figuring out what happened with Genaro and what working with this newcomer would be like.

Gómez and *Jefe* Claudio had met some years before when they worked together for about three seasons on a pontoon. Later, the company split them up.

> *"Those were good years", Claudio said. "Working on a pontoon is much easier and living is quite comfortable. The only problem is you became fat as a 'gato de campo' (a country cat). People fight to get a post there, you are more isolated, but working conditions are better". (Gómez assents with a head movement).*

According to Claudio it takes time to form a skilled crew. Once they become a reliable team the *Jefes* must struggle with headquarters managers

to keep them working together for next season. There is a tendency to split good workers among different Centros. After three rounds of *mate* Claudio jumped up and went grumbling to the office to work out and send the centro's daily report to headquarters.

> Gómez, the capataz, is around 27 years old. He was raised in the local inland village of La Tapera, located in a mountain valley upstream of the Cisnes River, where livelihoods are based on cattle ranching. He married and moved down the valley to his wife' village Villa Amenguales, a settlement that popped up during the construction of Aysén's main road; the Southern Highway. They actually met when he was working on the road construction. He began working in salmon farming as an apprentice diver. Once he learned the job, he was hired by the company to work as both platform worker and diver, before outsourcing, when everything was done by company employees. His wife works in a nursery school. They can make a living from her salary, thus his earnings as a salmon worker go, almost entirely, to buy cattle that he keeps with some relatives in La Tapera. He sells meat in his spare time and became the provider of most of his colleagues. His proactive attitude quickly got him promoted to capataz, a post he does not value for economic reasons, actually payment is just slightly higher than workers pay and responsibilities increase – including non paid extra hours – but he does it out of loyalty to Jefe Claudio for whom he feels high esteem.

After a long chat Gomez went to his barrack and Claudio came back after two hours, complaining about the administrative workload. According to him, that is the paradox of having internet. Two years earlier, without internet, reports were sent on a weekly basis. Now, they are compelled to enter daily production parameters in special software – feeding rates, fish mortality and geophysical water conditions - and send it to the managers at the headquarters. They have been told that even top managers of the mother company in Santiago can access their online reports. On the other hand, through internet they chat and email family and friends. By midnight I finally went to bed to get some rest. Tomorrow would be a long working day, learning about the salmon farm routine.

One day with a crew

Activity in the camp starts at 6:00 a.m. I woke up, took a shower and by 6.30 we were having breakfast at the catering barrack. Workers had already their early first round of *mate* in their bedrooms. They speed up breakfast to go for the second round before embarking. Weather had changed dramatically since yesterday. It was stormy and heavy rain was falling. Five minutes to seven the crew was silently waiting at the motorboat. Woollen caps on their heads and completely covered by orange wet-proof suits. We were waiting for *Jefe* Claudio to come. Juan, *el panguero*, was loading new butane cylinders on the motorboat. Silence was broken with some joke that men rewarded with a lazy smile. Navigation was not easy. Waves hit the boat and splashed all over the deck. Chief Claudio was laying on the bow to counterweight the boat, while the men sat facing backward in order to avoid the rain and splashing waves. I take a look at Juan, the pilot, the elder crew

member, the only one who was standing up and firmly holding the rudder handle with his view on the horizon.

> Juan was about 50 years old. A former fisherman from Puerto Aguirre – located on a southern Patagonian Island – but currently living with his wife and daughters in Coihayque. He moved to Coihayque years ago to allow his daughters to continue studying at secondary school. Being away from fishing made him lose his fisherman's license. He made a living in Coihayque working in the construction sector as bricklayer. After 6 months of unemployment he got an offer to work in salmon farming. He accepted and has been in the company for 3 years. He acknowledges that making a living fishing reports better earnings, but is more risky. He said that he gladly changed his fisherman's license for a job in salmon farming. Moreover, being the motorboat pilot, he earns a supplement of 50,000 pesos, about USD 100, on top of his salary. Although all crew members know how to pilot a *panga*, just one is 'officially granted' the post by the farm chief.

We arrived at Marta at 7:30. There were two night watchmen belonging to an external company waiting for the reception protocol. Claudio jumped off the *panga* and proceeded to check the plastic seals of every single net-pen frame. Seals bind the cover net and metal frame of the inner corner that serves as entrance to each pond. This procedure is done every day before the crew leaves the platforms. If seals are intact it means no one could have entered the ponds and taken any fish out. Once the inspection is done, a brief report is signed and the night-watchmen leave on a small but speedy motorboat that comes to pick them up. They shall return at 5 pm to start the night shifts again. Platforms are guarded from 5pm to 8am and split in two shifts.

The surveillance company that works for GrandSalmon consists of 24 people divided among farms watchmen, supervisors and motorboat pilots. They have an office in Puerto Cisnes and headquarters are in Puerto Montt. They don't have a camp such as Villegas, instead, they dwell in sub rented rooms in the homesteads of some of the few local settlers living on the Magdalena Island. The surveillance company and settlers make a deal for monetary payments and for refurbishing and adapting the settlers' homes – *mejoras* – in order to host their workers properly. All watchmen come from outside the Region of Aysén. They work in a shift system called 24x7 (24 days in and 7 off). Means for travelling home vary, but just getting to Puerto Montt, for which the company takes charge of the expenses, takes about one day. Their basic function at the farms sites are two; guarding the platform against the actions of 'third parties' and, when possible, minimizing the attack of predators. 'Third parties' turned out to be some fishermen who in the past had either robbed fish from the platforms or stole the stored dead fish to use it as bait, and the main predators are sea lions for whom a platform full of fish is an irresistible target. In both cases they act mostly by dissuasion because, according to law and company policy, the guards cannot carry guns. That was not always the case, and indeed at the time of my visit the company was on trial accused of slaughtering some sea lions.

> The main routine activity for crew members at the platforms is feeding, which in a semi-automatic system like the one in Centro Marta, requires up

to 4 workers for each module; two at the warehouse supplying the blower tank with fishmeal and two on the platforms central walkway, right and left side, holding the tubes that blows the pellets up with a rhythmical pulse. The feeding pulse is the result of a ratio of pellet/fish/minute which is adapted by the staff throughout the lifetime of the fish, with maximums that should comply with ISO norms. In summertime there are two feeding shifts from 7:30 to 1pm and from 3 pm until the light is gone. When fish are close to slaughter weight they must be provided with up to 15 tons of food per day, whereas by contrast a new generation of 80 gram smolts are fed with just 400-500 kgs. In the case of Centro Marta, the trout were about 2 kgs average and they were to be harvested at 2.7 kgs. With such feeding rates, it takes up to 25 minutes to feed each of the 20 net-pens. Feeding must be cut down when fish stop eating. For the company, feeding costs are the major part of the cost structure, so they have sophisticated feed control systems to determine this point and reduce losses. It is a complex that includes a dual system of a monitor connected to a submarine camera and underwater collection cones that recycle the uneaten pellets back to the feeder's eyelevel signalling when fish are reducing consumption. Workers are supposed to use both systems but, in practice, its joint manipulation is complicated. They use the monitors when bosses are around, but they place more trust in the cone systems and their careful observation of fish behaviour. Mario, one of the feeders explained to me:

> *Look, if you observe the fish you'll learn the process soon. They start to get excited with the noise of the blower so the school comes up to the surface swimming in circles frenetically – I could clearly notice the movement of fish on the water - you point the cannon to the centre first and calm the big fish, then you shoot pellets to the margins where smaller fish try to get their ration. After a few minutes they slow down and start to descend, but they are still eating. Right there is when you need to pay attention to this thing hanging there – he points to a plastic bottle tied to a tube coming from the feed collecting cone. Once you see a couple of pellets in that bottle, you wave to your colleagues at the warehouse to stop the flow. This is how rainbow trout behave, Atlantic salmon are another affair.*

They might use walkie-talkies to communicate with the warehouse staff, but due to the loud noise of the pump they have developed an alternative system of signals. Holding up the yellow cannon, means "start the flow", waving it means to "stop", and holding a fist up is a warning to hold the flow shortly in order to check some malfunction. There are so many technical details, as well as contingent events related to the practice of feeding, that it becomes the key element of success or failure for salmon farming.

> Mario is a 26 year old feeder who has been working for one year in GrandSalmon. Before, he worked two years in another salmon farming company located in the southern fjord of Aysén. Prior to salmon farming, he made a living as a carpenter in the construction sector in Coihayque, where he currently lives with his wife. He regards himself as truly Patagonian, because was born in Cochrane, one of the southern towns of the region.

He went on talking about his work:

> *I like this job. Salaries are higher than average wages in the construction sector; what's more, since you are isolated you are more willing to do extra hours. Today's workload is not really heavy. In the company I worked before, everything, I really mean everything was done by the same crew and nothing was automatized. Nowadays, we are just in charge of feeding, all the rest is done by contractors.*

Around 10 am a motorboat approached. They tied the boat to the deck and raised a flag at the entrance. The divers had arrived. Diving is a crucial activity that has also been outsourced. On a daily basis they collect all the dead or sick fish at every Centro. A diving team is made of three people, one diver and two assistants. All of them are divers, but they shift tasks at each *centro*. They quickly set up all the equipment to start working. One assistant loosened knots and opened up a corner of the cover net and the diver jumped into the pond. After 1 to 2 minutes the diver emerged with a net filled with dead fish. One assistant received and counted them and the other recorded the toll in a form. Then the diver received a quick sponge bath with iodine solution and jumped into the next one. This procedure is repeated in each one of the twenty net-pens ponds. They dive up to 18 meters below the surface. The whole procedure takes for about 40 minutes. Divers left the fish in plastic bins in the central walkway. Then, they go to the next platform where one of the assistants takes up the diver shift.

Diving in this specific area is monopoly of one company. They have a base on a small island called Esperanza. There are 30 divers. Most of them come from declining shellfish fisheries – *buzo mariscador* – and became salmon farm divers. They have a permit to dive up to 15 meters below sea level, thus their normal task is the extraction of fish and net repair. Among the 30 there are four professional divers – *buzo comercial* – with permission to dive up to a depth of 25 meters. They work whenever duty below 15 meters is required.

Rain had stopped and the sky began to clear up. Around 11.30 am the Fiordo III arrived bringing Roberto, the Farms Production Manager and Domingo, the Chief Veterinary. They were on a round to inspect fish mortality. At the headquarters there is a strict control of fish mortality rates in order to detect possible health outbreaks. A rate of up to 5 fish per pond seems normal for a population of 30,000. I heard of catastrophic cases where up to 5 divers where working to take dead fish out of one pond. It is from those cases that the concerns of keeping health experts with a close eye on platforms stems. They exchange some opinions with Chief Claudio and check the records signed by the divers. Afterwards, Domingo, proceeded with necropsies on the dead fish. Provided with surgical gloves and scalpel, he skilfully opens up some dead fish and examines their organs. They exchange opinions and go along to take some samples from other bins. They conclude that it might be some bacterial attack, but nothing to be about worried yet. A vaccination team would come soon, before the food safety restriction period starts. Then, they left to go to another farm.

At 12.30 p.m. the crew gathers around the entrance and we head back to Villegas to have lunch. Two workers remained guarding the platforms. Lunch is followed by the *mate* ritual at home. The same happens in the barracks, where workers gather around in different groups drinking mate.

At 3 p.m. we were back at the platforms, and the feeding process started once again. *Jefe* Claudio and I collected all the wheeled bins containing dead fish – *la mortalidad* – and loaded them onto the motorboat. We moved to the next platform and did the same. Right afterwards we headed off to a warehouse about ten minutes away, where all the dead fish were stored in bigger plastic containers – *caseta de mortalidad*. He explained that the dead fish are picked up twice a week by a company which transports them to Puerto Montt and makes fish meal of it. I witnessed the process when *el San Antonio*, a kind of big trawler arrived and, with a mechanical arm, lifted the full bins and replaced them with empty ones. Claudio then closed the warehouse door with an impressive metal lock, and foreseeing my enquiry he said:

> *More than once warehouses have been assaulted by hake fishermen who are after discarded fish to use as bait, something that the company is not willing to allow.*

We head back to the platform but turning his head back to the floating storehouse, he asked:

> *Did you notice that all warehouses are painted green? What for? I asked back. Due to our company´s environmentally friendly policy... they want to make 'them invisible', to blend in with the landscape, he answered with an ironic smile, at least I thought it was ironic.*

By 4 p.m. a ship moors at the platform. It was an old trawler named *Pablo III*[4] refurbished to service salmon farming. It was a task force on assignment to change both the perimeter net and *las loberas* – a double net that covers the entire platform under water. Both sets of nets are the outward protection against sea lions – *lobos marinos* – and need to be changed and repaired every few months. The team, also from an outsourced company, was formed by 2 professional divers, four assistants and the skipper. It took them two days and a half to accomplish their duty.

At 5 p.m. the first shift of watchmen shows up. After following the 'all in all out' protocol, he went to a small fibreglass cabin at the end of the walkway. It starts raining again. Around 6.30 p.m. the last ponds were having a second ration of food and staff member were securing equipment and fastening the ponds seals. At 7 p.m. we went back to the camp under a light rain. At the boat crew members were exchanging impressions of today' fish behaviour on each platform and teasing each other. Right after disembarking, people went to the room with the main generator. Because of the heat, the place has been adapted for workers as dryer room. They took off their wet suits and hung them to dry. Then, they showered, changed and went to the catering area. At dinner time the TV is always tuned in to one of the soap operas. Afterwards, evidently tired they gathered at the barrack

for last rounds of *mate*. Chief staff met at the office to prepare and send the daily reports. Before going to bed I recorded the experiences of the day. In a brief recollection, I realize that a single *centro* was the place of encounter and articulation of 9 crew members, 3 watchmen, 3 divers, 2 health and production experts, 7 net repairing workers, 4 crew of the dead fish collecters and 1 researcher. 30 people, two ships, four motorboats and 1,2 million trout (see Photos 16 to 19 in Annex 4).

Social life in a Pontoon: *Jefe* Gabriel and the fish farmers floating school

GrandSalmon has set its operations in two geographical areas both in Patagonia: Puerto Cisnes and Melinka (see Map 2 in Chapter One). The site-specificity demanded different strategies for the organization of labour and the arrangement of technologies. We now turn to learn about Melinka and the technology intensive system of pontoons.

The journey to learn about salmon farming pontoons started in Quellón, the southern city of the Island of Chiloé in Region X, which has become the main port towards the archipelago of Las Guaitecas. This group of countless small islands is on the political-administrative border of Regions X and XI, a contact zone that is regarded as the new aquaculture frontier of Patagonia (this area corresponded to the Region Ten and a half mentioned in Chapter Six). 'GrandSalmon', like many other companies, opened up a second area of production around the village of Melinka. The visit was coordinated long before through my contacts in Puerto Cisnes, so I was just given a name of the Farms Production Manager and the departure date and time of the catamaran from which the crew members returning from their days off were due to embark.

When the Norwegian catamaran *Sognekongen* shows up, something like 80 people quickly gather at the pier. They were waiting, sheltered from the rain, in different improvised shelters along Quellón´s shorefront buildings. At first sight, up to 50 of them looked like salmon farm workers. *Los salmoneros* are easily identifiable: young men wearing similar wet proof jackets, carrying life vests and heavy backpacks, that tend to flock together according to the company they are working with.

The *Sognekongen* is a high speed catamaran belonging to a Norwegian company with capacity for 200 passengers that follows a route all the way down along the archipelago, mooring in every single village that has a wharf. I enquired about the history of the high speed boat. It turns out that in 2000 a Norwegian agronomist was working in the region in charge of looking for suitable salmon farm sites for Norwegian companies. He realized that no commercial transport was available or at least not any suiting the appropriate standards for the salmon farming business in the Patagonian fjords. Apparently, he seduced the owners of the leading Norwegian company of maritime transport *Fylkesbaatane i song og Fjordane,* who were attracted to the business perspective of an increasing demand due to the expansion of salmon farming and decided to re-route the *Sognekongen* to Chile. The catamaran became the fastest alternative option to the slow and uncomfortable weekly ferries - *barcazas*. In addition to higher fare rates,

they receive a governmental subsidy for each passenger, a subsidy that was created to encourage transport of people in isolated regions[5].

> While lining up for boarding at the pier, I met the Farm Production Manager of Melinka, who immediately introduced me to Gabriel, the Chief of the Centro I was assigned to. I spent most of the two and half hours crossing the Corcovado Gulf talking to Gabriel. At least, before I started getting seasick. The infamous Gulf was honouring its bad reputation of difficult sailing.
>
> > Gabriel is a 34 year old fishing engineer and one of six seawater farm chiefs that the company has appointed to the area of Melinka this season. Born in Santiago, Gabriel now lives with his wife and two children in Quillota, a city eighteen hours away by bus from Quellón. He was coming back after spending one week with his family.
>
> The shift system for those in more isolated settings is either 14 x 7 (fourteen working days and 7 off) or 21 x 10 respectively. Not surprisingly, he confessed that what he really detests is the time spent travelling:
>
> > *It happens that I really feel at home when I arrive at the pontoon. It might sound terrible, but it's the way I feel. Of course I miss my family but, after all, I spend most of my time at the centro with my team mates.*

With ten years in salmon farming and in four different companies, he had already earned the reputation of veteran. He said he has been a privileged witness of the expansion to Patagonia:

> *For you, as a visitor, it will be relatively easy to see how aquaculture is currently being practiced in this region. For us, and for the people of Melinka, the changes have been incredible and have taken place at an amazing speed. This was a village lost in the middle of nowhere and now you can perceive a buzz of activity. It would have been unthinkable, without the technology and money invested, to expand operations in the archipelago.*

After almost three hours of pitching and rolling - it takes seven hours for normal ferries to cross the Gulf - the catamaran approaches Melinka, the only village in the whole archipelago of Las Guaitecas (see Map 2 in Chapter One). Melinka was a small Huilliche settlement that flourished in the late XIX century due to timber exploitation of the Cypress of Guaitecas. After depleting the archipelago of cypresses, the community went back to a livelihood based on shellfish fisheries[6]. Melinka is now going through a real boom after many salmon farming companies and services related to the business started to build headquarters, or use it as a mainland platform for operating in the archipelago.

> Right after disembarking we were taken to a motorboat belonging to GrandSalmon that was waiting to carry workers to their respective *centros*. The immediacy of the transfer took me by surprise, because night was falling and the fibreglass *panga* was rather small, just up to 8 passengers, and apparently without modern navigation instruments. One of the workers, guessing my concern, told me:

For us it is better to arrive to the pontoon as early as we can, it is the most comfortable place to be, you'll like it. Moreover we don't like Melinka, it's such a boring place. We don't have much fun there. For us it's just an entrance and exit port.

On board we were waited for the pilot – *el panguero* – whose nickname was '*Cototo'*. He gave each of us a bag with a food ration made of one sandwich, a soft drink and fruit. We were six passengers, all equipped with our thermic suits and life vests, to be delivered among three farms in something less than two hours. Men were chatting, animated as old acquaintances, whereas I could barely figure out the seascape in the dusk. The stormy sky and rocking sea made me increasingly aware of our precarious boat. In minutes it was completely dark, so pretending to be calm, I finally asked the pilot: *How could it be possible to navigate without GPS and a non visible point of references?* He replied with a kind smile:

Don't be worried I'm melinkano – born in Melinka – and before I was a fisherman, so even in this darkness I can orientate. It is true that sometimes it is not easy, but today the sea is calm – la mar esta calmita-. And you'll soon see that we have our little tricks.

After a while, most of my fellow travellers were asleep, they skilfully sat rocking in their life jackets, a clear sign of tranquillity for a novice like me. Some spots of light start to show up in the dark horizon. One, two, three, up to four in a moment, separated by what I guessed were couple of kilometres. They were the first signs of the floating farms. When we approached one of them, Cototo shouted loudly to wake people up: *Hey guys! Those from Elena Island get ready!!* By now I could clearly see an illuminated three story floating house – a pontoon – and some silhouettes who had perceived us. Without shutting down the engine and just holding the floating structure by hand, two workers jumped out, said goodbye and were received with jokes by their site colleagues. We went along and the scene was repeated once again before it was our turn.

In between we found many other illuminated houses that, according to my travel mates, were this or that *centro* belonging to this or that company, which in turn were close to this or that island. The naturalness of these geographical orientation skills and the previous words of the skipper made me think of the pontoons as the new lighthouses of the archipelago.

The crew who received Gabriel and me at Centro Chaffers were two men and a woman. Carlos, the Farm Assistant, was an aquaculture technician coming from Santiago and was acting as Chief in the absence of Gabriel. Teresa and José, the workers – operarios – were also técnicos but came from the vocational high school of Puerto Cisnes, as opposed to Carlos, who studied at the university in Santiago. Both Teresa and José were still living with their parents in Coihayque. None of them were older than 28 and Teresa was even just about 20.

A Salmon Farming Pontoon is a floating structure built as a three story house. The first floor is destined to the storage of fish meal, drinking water and fuel oil. There is also a

room for two big generators, one for lighting and heating and the other for pumping the fish meal pellets to the farm platforms. The second floor is where the crew lives and the third floor is a chief staff office and watch tower from where the fish platforms can be seen. The pontoon is equidistant from both modules, which in shape and design are rather similar to conventional farm modules. Rectangular metallic frames hold up to 20 net-pens with over 1 million fish. The greatest difference with the conventional sites is the level of automation. Pontoons are units thought to be in isolated conditions due to a geographical lack of accessibility. Hence, they are designed to maintain a relative higher degree of autonomy from mainland facilities. Pontoons are technology intensive sites, where most of the processes are automatic. Feeding is controlled from a distance by software and the monitoring of fish feeding is followed through submarine cameras (see Photos 16 and 17 in Annex 4). Only four workers are needed for its operation, but it requires a higher level of training because of this *Centro Graeffer* was known as *La Escuelita* – the little school. Qualified novices were sent there to be trained in managing pontoons. Gabriel was regarded as an experienced and patient chief, hence the company managers use him as a trainer.

> When we arrived the working day was over, so crew members were comfortably seated in leather couches watching television. The second floor had one open spacious room with a common living room, dining room and kitchen, with a lateral narrow corridor that lead to three bedrooms and two bathrooms. Full of windows, the view was no other than the fish platforms illuminated by scattered moonlight and the silhouette of Chaffers Island. House appliances were brand new and very similar to those at Marta. The difference was a huge fridge filled with frozen meat of different types and some off season vegetables. No catering service was available, hence the crew cook for themselves. They take turns cooking every evening and while one prepares dinner, the rest either chat or watch the soap opera.
>
> When dinner was served I noticed the yacht-like table, with raised wooden edges, to stop things from falling. Just then I felt the smooth but steady wave-like movement of the structure. After dinner workers wash the dishes, watch the news and then go to sleep, whereas the chief and assistant went up to write and send the daily reports to the central headquarters in Puerto Montt. They had satellite connection to internet, so reports were sent by e-mail. Internet was not just for work, they also made personal use of it for entertainment, reading news and chatting with family and girlfriends in spare time. The use of internet was a privilege granted to chief staff.
>
> After such a long day I went to sleep in a bunk bed in a room that I shared with the men. Teresa had her own room, as well as *jefe* Gabriel, who in addition has his own bathroom. The room was comfortably heated and through the window I could see the fjord. We were floating, anchored in the middle of the Patagonian archipelago.
>
> Next day I joined the normal activity of the pontoon, which in principle did not differ much from a conventional site. Workers are left at the platforms, one each, as early as 7:45, whereas the staff come and go between the platforms and the pontoon by motorboat. They intercommunicate with walkie-talkies. It rained steadily but everything seemed conditioned for such

weather, particularly the thick orange wet proof suits. With the automatic feeding, routine tasks at the platform get reduced to supervising the normal functioning of blowers, to check the normal behaviour of fish and receiving the team of divers for the daily extraction of fish mortalities or eventually teams related to other services like a change of nets, vaccination, maintenance, etc. The incredible ability of these workers to interpret fish behaviour should not be overlooked; they can tell you when fish are ill, hungry, nervous, overfed, with slow metabolisms and so on. They have become a specialized human interface that mediates between technological systems and the school of fish. The skilled workers have become something like fish shepherds.

At the pontoon the main routine tasks of the staff are controlling the right level of inputs needed for keeping the fish production going; fuelling oil to the generators, fish meal to the blower's tank and butane cylinders onto the motorboat as well as watching the submarine cameras to control fish feeding behaviour and accordingly to adjust the software; to slow it down or speed it up. In addition, the chief of staff watches over the human supplies and needs like water, food, equipment, as well as scheduling and coordinating days off. Eventually they must receive and store all supplies, keep inventory records, send reports to headquarters - often required with unexpected urgency - and controlling the effectiveness of contracted services. The daily operation of the radio, which could be done by whoever was available or close by, was of particular interest to me. During all the time I spent on salmon farming sites, I could hardly grasp anything coherent from the noisy and distorted chatter. This minimal, but fundamental skill shows how important the practical understanding of context is.

As an anecdote, I can tell about the opportunity I had to witness how they organized a football match through radio talks. It was between workers of GrandSalmon and some of the service companies. They agreed to meet a specific weekend at the field of a tourist complex on an island nearby. For nearly one week, in between the coordination of supplies and services, they laughed and teased each other by radio. They finally bet a lamb to be barbecued by the losers. Unfortunately, I left the pontoon before the match.

Despite the geographical isolation, communication amongst neighbouring fish farms is fluent, either by radio or contact through boats. There is an intense and reciprocal exchange of supplies, food, equipment, and, above all, sociability. There is more communication between workers of the same company for logistic reasons, but they do get in contact with other companies' workers and, if needed, they do not hesitate to help someone else.

A week later, I was waiting for the motorboat to take me back to Melinka. Suddenly, we were informed by radio that weather conditions were changing severely and a heavy storm was expected in the coming hours. They could not come to pick me up since they were already figuring out how to safely transport an important Mexican customer that was visiting the

> company fish farms. The only chance I had to return was to catch up with the boat carrying the Mexican VIP passenger. Otherwise I could remain for an uncertain amount of time, waiting for better navigation conditions, something that would interfere with my series of scheduled visits to the processing plant. Then, to my surprise, my way out was spontaneously coordinated by the pontoon crew. Gabriel, committed to getting me out, did a complex radio triangulation with neighbouring pontoons and sent me with Teresa in search of the motorboat, even compromising the short supply of the pontoon's butane cylinders. After searching for half an hour, navigating in between islands in an already stormy sea, we caught up with the boat, which was ready for departure from another pontoon. Inside there were two visitors, one Mexican and one Chilean and three company employees, including the pilot. The Mexican businessman was given a field overview of production, accompanied by some of the company executives. His enthusiasm about what he saw was diminishing as we sailed into stormy waters at twilight. It was also the worst navigation condition I had experienced, but after two hours we arrived safely at Melinka. I understood now, by dramatic contrast, what local skippers meant by *mar calmita* - a quiet sea.

During my stay with the pontoon crew I observed a landscape in movement with a parade of watercrafts and cargo boats, mainly due to the outsourcing process of diving, fish health and cargo. This means that for a crew of 4 to 5 people, daily routine includes relating with the same number of visitors. The restless activity, however, did not get reduced to strict service contact but shows a high degree of social relations of friendship, companionship, and solidarity. This scheme is repeated in hundreds of seawater farm sites that currently operate in the Guaitecas archipelago. We are facing a new type of technology intensive economic settlement which although it was originally conceived as a salmon production unit has become more than a workplace, it has become the everyday dwelling environment of people striving to make it appear more like home.

Photo 20. Fish farming workers boarding the Catamaran in Quellón, Chiloé.

Photo 21. Fish farming pontoon.

Photo 22. Automatic feeding control from a fish farming pontoon.

Photo 23. View from a sub aquatic camera for feeding control purposes.

GrandSalmon Headquarters: the white collar crew

The headquarters of GrandSalmon is located in the shorefront of Puerto Cisnes. It is a set of buildings and yards about 50 meters away from the beach and connected to the main coastal road. To get in you first need to ask an entrance guard for the person you are looking for. Only after crosschecking by phone and keeping your I.D. card you'll be given a "visitor" badge. For workers and personnel such procedures are ignored. They go in and out freely. The main building is a two story wooden building. The first floor is where the administrative staff works, secretary, accountants, human resources personnel, and the second floor is hosted by the higher ranked professional staff. In a separate wing of the building are the lower ranked professionals and technicians of activities that are not directly related to production. Outside, an ample yard and a set of different warehouses are bursting with logistic activity full of mechanics, electricians, and tractor operators uploading and downloading inputs and equipment mainly to keep the fish farms supplied and working in proper conditions.

> My entry contact was Domingo, the chief veterinary, whom I had taught at the university. He introduced me to the second floor staff, the managers of the 'Seawater Production Department'. Manuel was the General Manager of Production and below him there were 4 managers of specific areas related to production: Environment, Health, Farm Production and Stocks.
>
> Manuel offered me a cup of coffee and then went on to explain the company's organization chart. In his words everything basically worked around the Seawater Production Department. Although crucial for general functioning, the Departments of Maintenance, Supplies, Human Resources and Operations were there to accomplish the requirements of the 'Production' team. At the same time Production depended on both the General Manager and the Sales Manager of the central company office in Puerto Montt. GrandSalmon was organized in two geographical and administrative areas of production: Puerto Cisnes and Melinka. They differ in the degree of accessibility to farm sites from the mainland and the type of product. Thus, Cisnes has conventional fish farms with a semi-automatic process and a production oriented to *coho* - Pacific salmon (*Oncorhyncus kisutch)* – and rainbow trout (*Oncorhyncus mykiss*), species that are suitable to the estuarine water of the Puyuhuapi fjord. Melinka was the base for technology intensive pontoons, designed for an off shore type of aquaculture and the main product was *salar* or Atlantic salmon (*Salmo salar*). They currently run 22 fish farms, but there are plans to double the number in the next two years with an investment of USD 20 million. For such a strategy they already have 56 sites concessions and another 175 were in the process of being granted by the authorities.
>
> Manuel is a 33 year old Fishing Engineer who comes from Valparaíso. He has 10 years experience in salmon aquaculture four of which in GrandSalmon. Previously, he was employed as expert by two different feed companies. He started as Farm Production Manager but was quickly upgraded to General Manager of Production, due to his ability to sort out different farming crisis. He is married to Lucía and has a little girl. They live

together in Puerto Cisnes in a big house lent by the company. He enjoys his work close to the farms but wants to be relocated to Puerto Montt or Quellón, either at the main headquarters or the processing plant to have a better balance between his work, job opportunities for his wife and closer contact with his relatives.

He explained to me that 1998 marked a milestone in business strategy. As I shown in Chapter Four, it was a critical year in terms of results that brought to the company close to bankruptcy. However, the board of the mother company, a large agro food holding, decided to continue salmon farming but drastically transform the rationale behind production:

> *At that time we internalized* ***that we were not producing fish but food****. It is a conceptual change but makes a tremendous difference and triggered several measures in order to put it to work. Before, managers and personnel were in a struggle to decipher fish production. Now, we assumed we belonged to a high standard holding of food production. The salmon branch of the company was taken out of bankruptcy and we are now becoming a big player in seafood production (my emphasis).*

In practical terms the new reorganization meant firing beginning staff members, including both managers and local workers – *cinsenses* – and placing managers and personnel brought from the pork and chicken industry in key positions. It was also the beginning of a strong outsourcing and standardization of processes.

After this quite informative meeting with Manuel, I spent some time with the other four Production Managers. All of them are visiting fish farms on a daily basis, so below their desks they always keep a life jacket and rubber boots. Walls at their offices are covered with detailed maps marked by pins of three colours, that highlight the location of sites with active farms, fallow farms and plain concessions. I quickly noticed that a common feature of the four was that they are always on the move and by different means of transport. Domingo for example, was going the following day by *barcaza* to Melinka due to a health outbreak, three days later he is due in a meeting with the General Manager in Puerto Montt, and to get there from Melinka he will take an aircraft. Once in Puerto Montt he will travel by car to Temuco to visit one of the company's hatcheries. A week later he may join Manuel on a flight to Santiago to explain the yearly production plan to the company's board.

There was a clear segmentation of the professional staff between those who belong to the second floor, the Production Department, and the rest. They were clustered in modular desks with offices that had a view to the seaside and were in close contact to Manuel. They are the big fish; the white collar crew. None of them was older than 33. None of them had been with the company for more than 3 years, Manuel being the exception. All of them came from outside the region. There was also a symbolic division among office staff (professionals and clerks) and field (or fish farm) workers. Office staff wore light blue shirts with the company logo embroidered on the pocket. Workers did not.

The young managers were very excited, preparing for a company reception of important visitors. Next week they would have to account to a German ISO certification company. Bruno, the environmental manager was in charge of getting everything ready and visible to meet the ISO standards. This visibility requires a wide range of activities that are done before the expert team arrives; warning the fish farm personnel to more strictly comply with protocols, particularly those related to visitor security, painting of signals, and overall maintenance of buildings, picking up residues and cleaning off beaches and shorelines around the fish farms, etc. I left them busy with the scheduling.

Next day I joined Roberto and Domingo for a short first visit to the fish farms. Once back at the headquarters I met Adriana, the Human Resources Manager. She carefully explained the composition of work using excel graphs. She was in charge of human resources in both areas of production, which meant 189 employees. The Area of Cisnes has the largest number of workers, with 113, whereas Melinka had 76. The number of women working in this activity is still low, with 7 and 9, respectively. Six of them were in administrative functions and the other 10 were on fish farms. There were 42 natives to Puerto Cisnes, only 20% of all employees. Noticing my surprise she quickly explained this point. According to her, the company began with a larger share of local people, but after some years the relation with local workers turned out to be problematic (see Chapter Four). Adriana, a single woman who has lived in Puerto Cisnes for one year, does not hesitate to affirm that the big issue is that of responsibility:

> *Cisnenses – people from Puerto Cisnes – think of themselves as fishermen. With the fish quota system they work 2 or 3 days a month and earn a higher income than working in salmon farming. So they don't stick to the commitments signed in the contracts. The company rather prefers to pay more in travel expenses to bring responsible workers from urban areas such as Coihayque.*

She is proud of having implemented two systems for the benefit of the workers. One is the payment system and the second a Wellbeing Office. In the recent past, payments were done in cash at the end of the month at the company headquarters. This implied, according to Adriana, that workers, particularly those living 5 hours away in the city of Coihayque, spent a large part of their salary drinking and staying in one of the two brothels in town, with the externality that some did not come back on time to take up their work shift. Due to these 'side effects' of the behaviour of the personnel, she decided to design an e-banking procedure. She opened a bank account for each worker not living in Puerto Cisnes and gave them a card. Since there was no cash machine in town, they were obliged to go to Coihayque or to whatever other city and get the money there. Actually, as I found out later when workers talked about this issue, most of them gave the card to their wives, so women had access to money no matter where the husband was. The second system she reinforced was the so called Wellbeing Office – *Departamento de Bienestar* – which was implemented by the company in order to involve the affiliated workers in the co-administration of a small percentage of their salaries that is retained and saved along with an

equivalent amount deposited by the company. The money is then invested in different things which are prioritized by both parties' representatives. These include scholarships for children, wholesale of certain goods that are purchased collectively, health services not covered by insurance, such as dentist and optician, Christmas gifts and parties for the workers' families, etc. When I enquired about the existence of unions, she said:

> *Our company does not discourage unions, but people seem not to like them. Indeed, we have one union, but less than 20 workers have ascribed to it. If you ask my opinion, I think they are far more interested in efficient and concrete answers to their demands. Such is the type of work being done by the wellbeing office.*

In my third day at the headquarters I had a surprising encounter. In the morning we went for a round of fish farms visits with Domingo, the veterinary and Roberto. Once we returned to headquarters, Domingo introduced me to his wife Margarita, who was entering a small house besides the main building. She invited me join her. The house was a *call centre,* belonging to the mother company, one of the largest national food holdings. The call centre consisted of a number of online computers and five women with head talk sets, facing a small mirror - a trick they were taught to keep smiling. They were retailing food products – pork, chicken, turkey, wine and, of course, salmon – to customers calling from Santiago and other big cities. The call centre staffs were the wives of GrandSalmon´s professional personnel. They were not hired by GrandSalmon but by the mother company. Margarita explains:

> *It is a company strategy to employ top managers' wives, most of us are also professionals, in order to give us the opportunity to be more than housewives. Raising a family in this small, geographically isolated town, does not make you want to think of staying longer. They want our husbands to stay longer, so they targeted the wives to keep us busy. Anyway, wherever we go within this company we'll be "la señora de…"* (the wife of…).

But managers' wives do not stay long in this occupation. Margarita, a psychologist, the last one of the top managers wives still at it, actually told me she was about to quit the job this week. Being behind a screen with head sets, completing orders for food products is not appealing to them. They were after something more challenging, thus led by Lucía, the boss' wife, they convinced the company to employ them in a social program aiming to strengthen the company's relations with the community, for example, by supporting the school library. With the originally targeted women no longer working at the call centre, the company opened up these posts to the wives of technicians and lower ranked personnel.

Managers live in town in a small village with 7 houses specifically built for the professional staff. They often spend their spare time visiting each other, barbequing or going to church. As Manuel puts it:

This management team is working well because we are very much alike. We are young professionals, very committed to work and recently married. You can take the isolation of Puerto Cisnes as an opportunity to raise a family in close contact with your partner.

By the end of the week, guards at the headquarters stopped asking my name. The strict entrance protocol was over. At least it seemed they had got used to my presence.

Sites and Practices: making sense of salmon farming

In the previous pages I have presented an ethnographic account of those sites and practices that are constitutive of salmon farming as an activity. I intended to portray, in the most sensorial fashion possible, the everyday life of men and women and their close interplay with particular materialities and settings, such as platforms, boats, climate, landscapes and, of course, fish. The bodily contact with the *affordances*[7] of the environment is what makes them experience a strong sense of being-in-*this*-particular place. They have developed skills and practical knowledge to the point of constituting an outstanding type of livelihood: the salmon farmers.

The strategy up to this point has been to confront the reader with the everyday life in the sites where salmon farming occurs. These narratives give us a taste of how these livelihoods might look and how they are practiced by the actors themselves, but doing so through an engaged researcher, un-detached from the lived experience. Of course, these narratives raise a number of important questions about the social organization of work and the formation of a peculiar labour market. But, before going further, we need to take some steps in order to clarify how the distance between the real-life experience and the researcher´s process of recording and sense-making does not contradict an engaged epistemology in the study of livelihoods, sites and practices. First, I shall face the question on how I made sense of what I have experienced and described. It is a fair question due to the convincing argument that there is always something of this experience that we loose when it is mediated through any kind of representation, such as text. Secondly, this prelude also aimed to explore to what extent the practical constitution of an activity – salmon farming – linked to industrial capitalism, can be analyzed from a livelihood perspective.

Steps towards an engaged epistemology in the disclosure of livelihoods

We need to attempt to illuminate clearly what are the possible advantages of sticking to certain epistemological positions in understanding livelihoods through the study of practices and social sites. For the purposes of this chapter, I will undertake this task in a four-step formulation.

1) Perception of the environment. It should be clear by now that I am adhering to a phenomenological point of view that distances me from representational formulations of social life. An emphasis on perception rather than representation in the making and undertaking of an activity, particularly one that entails the immersion of actors in new environments, brings me to epistemological formulations such as Ingold´s (Ingold 2000). He has attempted to build a conception of an ecology of life rooted in experience

and the development of skills while *dwelling* in the world. Following James Gibson´s view, Ingold states that perception is not located in the mind but is distributed in the joint sensorial and exploratory movements of humans (organisms, in his words) in the environment (Ingold 2000: 3). Thus, in this account perception and experience is something that does not lie in the individual, but depends on the relational encounter with other organisms and the environment. In other words, it views perception as a distributed sensorial experience of the world.

2) Importance of practices and sites in the constitution of livelihoods. It is not just a phenomenological approach towards an ecology of social life in salmon farming which is intended here, even if it is something that as an ethnographic record already has a merit since it is lacking in previous accounts. But, additionally, the focus is placed on how this experiential process is transformed into practices of organizing an activity that, simultaneously, has created a qualitatively distinct process of differentiation and re-articulation of social life in the form of particular livelihoods. Thus, in this view, there is more than humans facing, adapting and transforming the environment. The relational nature of humans and things creates arrangements that influence the perception of how we constantly reorganize social life. In sum, this is an approach that understands what is social as more than individual perception or collectively constructed context, but that looks over the *sites* where this sociability becomes meaningful, by and for the practices that are carried out by actors (Schatzki 2003).

3) *Differentiation and identification*. As stated earlier, from this relational dynamics of sites, stems both processes of differentiation and identification among new groups. The active mobilization of means, in order to create and sustain hierarchies has often (if not always) led to controversies on the validity of claims of truth and claims over whose right to rule and order of social life shall prevail. These are the junctures where norms and customs bind some associations and allow them to endure, while dissociating others. The means used, either to settle these differences in favour of one or another, or to dissolve them through assimilation, are expressions of power relations. They depend less on the supremacy of certain values or worldviews, than on the strategies to impose them upon the acts of others. As Daniel Lockwood rightly put it as early as 1964 when he criticized functionalist views of social integration:

> *If there is an actual conflict of ends, the behaviour of actors towards one another may not be determined by shared norms but by the success which each has in compelling the other to act in accordance with his interest* (Lockwood 1964: 246).

4) *Heuristic use of a semi-autonomous social field*. To tackle this thorny, albeit vital to change, swirl of social life, namely the normative, but processual ordering of these differences, we can deploy a semi autonomous social field (Moore 1978), understood as a methodological strategy, that would treat the sites of salmon and trout production like a normatively geared field of interactions built over time. Thus, the intelligibility of actions among workers is given by practical understanding and framed by a common field of normativity and standardization, which in principle is imposed by experts (systems, protocols, rules etc.), but later are reconstituted and translated to what can be done by the workers themselves, taking into account the particularities and contingencies of site specificity. This includes a situated perception of work as a generative part of their lives. In time, this is translated to appropriate conducts, performance and movements that internalize the spatial and temporal differences, as much as the relations among the

elements at hand. A process that can only be fully understood through everyday practices. Following de Certeau, this is also the site where we can understand not just the appropriation of norms and rules, but the subtle resistances and stratagems to subvert rules in a space of constraint (de Certeau 1984: 18).

We need to extend Sally Moore´s original emphasis on law to practices and activities that go beyond the grounded process of constitution of norms, rules, standards, protocols and regimes of governance. A semi-autonomous social field is nothing but the practical context formed by actors' activities. In other words, *it is the field of practical understanding which constitutes the context of individuals' lives* (Schatzki 2000)[8]. The fact that workers face the rain, pilot boats, interpret fish behaviour, walk over platforms, receive orders, drink *mate*, and keep a particular sense of humour is what really entails the source of intelligibility of their practices and gives meaning to their actions. They are new inhabitants of the Patagonian fjords. They came not through ties of kinship, nor community ascription, but searching for ways to secure their need for employment. They are migrant workers, randomly placed in different sites by companies. However, through the course of actions, there are both processes of identification that bind them together, as well as processes of differentiation that segregate them, placing tension on their field of actions. At this point lays a crucial and distinctive interest on social change that goes a step beyond the mere description of socio-technical networks. For the purpose of the sociology of development we may draw careful attention to these dynamics of social differentiation and the formation of identity.

Actually, instead of an 'identity' as *salmoneros*, I tend to see an ongoing *process of identification* with an activity which is generated by the execution of certain actions, which repeated over time create nexuses and links among those practicing it. This is the *identity of action* which has been introduced in the previous chapter. On the other hand, differentiation as we have seen in the case of managers and higher ranked personnel, shall be also understood as practices that entail an active mobilization of resources, symbols and materialities in order to segregate different types of rules and norms according to ranks and duties of a certain hierarchical capitalist ordering of work e.g. the type required by an agribusiness organization chart. In short, it means the (also practical) mobilization of power to accomplish the maintenance of certain hierarchies and knowledge-claims of expertise (Latour 1986; Munro 1997).

As Reed puts it when he referred to organization as social practices:

> *Acceptance of the practice view necessarily entails a rejection of the concept of organization as a unified entity, effectively controlled by a dominant agent (that is employers/managers), able to translate its preferences into outcomes in an unconstrained and unproblematic manner* (Reed 1992: 115).

In the case of workers, we shall understand their different ways of valuing and interpreting codes, protocols and rules, when compared to managers and experts, as an effect of them being at the frontline of particular sites of interactions. They are at the platforms growing fish. Their active and bodily engagement in the working environment create big differences with those who are not. These physical spaces of contact and exchange create ties, solidarity and loyalty, of a different sort. Not better, not worse, but qualitatively different.

For instance, I found many remarkable manifestations of loyalty, among the crew members, like the time experts were visiting platforms and a fish farm chief refused to go back to the camp in the experts' boat, but in the *panga* with his crew as it is expected from members of a common endeavour in fisheries. There also are manifestations of this kind in colleagues of contracted activities. Lastly, there is a strong commitment to their families, through the hard conditions they are willing to face in order to earn a living.

In the case of managers I heard declarations of loyalty to the company, something that can be nuanced in off-stage situations, where they were also critical. As Watson points out, managers sometimes strive for the ambiguities that are implied in their multiple ascriptions to roles, such as the need of being differentiated from and by 'the managed' but, at the same time, not to the point of loosing membership with those who are subordinated (Watson 1997). Unlike Watson, however, I argue that we should look for the everyday construction of managerial differentiation and belonging beyond their discursive statements on or off-stage situations, but for the description of practical engagement with their subordinates. This way, we might see how this ambiguity is not 'managed', by the individual manager but, relationally modulated by the group according to changing situations. As Munro, referring to process of group formation, stated:

> *[T]he focus of research should not be restricted to asking what makes them work as groups. This aspect of the* ***labour of division*** *is of course vital, but we should also be interested in the variation and modulations that are necessitated in preserving multiple memberships (in bold my emphasis* (Munro 1997: 18) .

In other words, in the interpretative steps I have taken there is an epistemological convergence between a dwelling approach to livelihood and a theory of social practices in the constitution of sites of human activity. In addition, I have emphasized that the deployment of a semi- autonomous social field is not based on its phenomenological existence, but on its use as a heuristic device to make sense of the normative framing in processes of differentiation. The dwelling approach understands perception as an experience which is distributed among the united entity of organism-environment. The practice perspective focuses on the practical and bodily constitution of meaning, through the relational composition of humans and things in activity. In fact, Ingold recognizes the importance of the corpus of knowledge, known as practice theory, in challenging cognitive approaches, inasmuch as he sees practices as equivalent to the bodily mastery of the world he associated with skills (Ingold 2000: 162-163). The idea of keeping both perspectives separate, in different steps, is less due to epistemological distance than to the point that each one has a fine-grained language that refers to two different moments of the process. A first moment is the immersion of workers in this new environment and the second is the constitution of the sites as particular arrangements given by the repetition of activity. In other words, the interlocking of activities in certain physical space (environment) and the temporality of events as perceived by actors are the *site of the social* [9] or more properly the site of sociability of particular livelihoods.

Livelihoods within capitalism?

A second question to elucidate through this joint process of ethnographic description and theoretical sense-making is whether it is possible to apply the notion of livelihood to describe a capitalist intensive activity? Yet, a strong counterargument in using a *livelihood* approach may be that it overlooks the capitalist nature of industrial salmon farming as an alienating external force that determines the possibilities of people, increasing its vulnerabilities through a so called structural constraint (Kaag 2004: 53). It may be so, for in this case the presence of capitalist driven intervention cannot be denied. However, dwelling, working, and recreating social ties in the Patagonian fjords cannot be dismissed as something trivial, due to *a priori* critical stance towards capitalism. In my view, it is rather the opposite stance which is needed to understand the constitution of an activity; an emphasis on livelihoods that ensures the existence of capitalist industrial aquaculture, and not the other way around. Is it possible to reverse this logic? It can be reasonably argued that what mobilizes people, technology and even fish down in Patagonia is money, put to work by capitalist relations. But, what if, before going on to check the determinants of salmon farming, we start with both the contingencies and motives that brought people to this activity and their actual engagement in this process?

True, capitalism makes instrumental use of this differentiation to make profits and, at the same time, keeps workers in minimum conditions to transform the potentialities of capital in actual results. But, on the other hand, workers make instrumental use of capital patronage in order to fulfil their labour needs and, eventually, transform their working conditions in social relations and new creative forms of social ordering, not necessarily tied to alienation.

At this point, for the elaboration of an alternative form of understanding both the social organization of salmon farming and livelihoods, it is crucial to recall the thorough distinction between *labour* and *work* formulated by Hanna Arendt in her book "The Human Condition" (1998 [1958]). Arendt convincingly argues that something that political economists such as Marx and Smith confused in an early stage was that labour and work were subsumed in one concept under the same productivist approach, thereby blurring the importance of the distinction. For Arendt *labour* is the work every one of us must do to keep ourselves alive. The time spent in this activity, as well as the products needed to accomplish it, are consumed in the actions of fulfilling our physiological needs, they do not remain and need to be constantly – daily - pursued. Labour, in other words, is the reproductive work of our bodies that we are all forced to cope with. *Work,* on the contrary, is based on the activities, the time and efforts we spend, once we fulfil our *labour* needs, on creatively transforming our world through the skillful *use* of tools and instruments. Work results in outlasting human artifice. In Arendt's words whereas the *animal laborans* consumes the world, the *homo faber* builds the world.

> *Unlike the productivity of work, which adds new objects to human artifice, the productivity of labour produces objects only incidentally and is primarily concerned with the means of its own reproduction; since its power is not exhausted when its own reproduction has been secured, it can be used for the reproduction of more than one life process, but it never "produces" anything but life* (Arendt 1998 [1958]: 88).

Much of the current criticism pointing to the vulnerabilities of livelihoods depending on industrial capitalism overlooked the fact that people do make decisions, such as becoming wage workers, based on the search for means at hand to fulfil labour needs. This is of course the supply of goods needed for the alienating, mechanical, enslaving task of keeping our lives going. But the real creative force is not consummated in this process, since it lies in the capacity of people to transform the world through the skilful mastery of their environments, even under changing conditions.

Arendt´s distinction gives way to think of livelihoods as the activities for the compulsory fulfilment of our human *labour* needs and *work*, in sharp distinction, as one of the creative resources people have to accomplish the former. Indeed, work might be a crucial resource but not the only one. Work, as an activity, cannot be seen as isolated from the pool of resources that belongs to the collective construction of all that is social; kinship, networks, mobility; material resources, production relations, cultural practices, etc. What we call livelihoods are the joint and collective mobilizations of resources and strategies that, paradoxically, point to secure our labour needs as singular individuals. Arce's distinction over the use of assets or capital in the livelihood approach pointed in this direction (Arce 2003). Assets, in most cases are collective and socially constituted according to particular values, whereas capital is privately owned. If we follow Arendt´s distinction, the outcomes of livelihood to secure our labour needs are thus consumed and therefore cannot be accumulated in the sense of capital. Instead, what remains are assets understood as socially constituted resources that are at our disposal to be transformed through our working capacities.

From this perspective, it can be argued that we never stop carrying out a livelihood, and when this possibility is threatened (war, famine, physical inability, age) our lives are at risk. This perspective does away with the idea of sustainable livelihoods. When livelihoods are endangered, it is not because we are lacking something that can be determined in advance, but because a serious interference is causing major hindrance on peoples capacities to cope with life.

This criticism points to the instrumental assumptions that has made the livelihood approach so popular among policy makers, as many authors had stated (Hebinck and Bourdillon 2002; Arce 2003; Wartena 2006). In these policy oriented frameworks, livelihood is conceptually biased to poverty reduction programmes; therefore authors assume vulnerability as the key determinant to judge a livelihood as sustainable. Unfortunately, a bottom-up approach to social life based on the study of how people make a living has been reduced, over time, to a policy framework.

Then again, to what extent the study of the practices of the human interface between technological systems and fish can be seen as a process of articulation that goes beyond industrial capitalism? A tentative answer should take the actors opinion seriously. To start with, I encountered no one during my fieldwork within the company (and contractors) complaining about working on salmon farms or about salmoniculture. Not a single one. I did encounter, however, many serious and sentient concerns about working conditions, lower wages, company policies, misrecognition, environmental mismanagement, career perspectives, familiar situations, etc. Being faithful to them, I must say they were actually not only aware of being a constitutive part of salmon farming through activities requiring particular skills, but in certain cases they were proud of achievements they rightly regarded being the result of their creativity and

improvisation. Certainly, salmon farming is an occupation that is subject to great exigencies in certain times, but also, and here de Certeau comes to mind again, there are many examples of how people manipulated and blurred the dividing line between work and leisure in everyday practices. What for some (managers, researchers, among others) is thought as a space of work, cannot be so neatly divided for workers, since they are the ones who need to reconstitute ties that go beyond one set of relations, that of production.

The idea, heard many times during fieldwork, was "*todo fue hecho a pulso"* (everything was done by hand). A statement that must sound exaggerated in the context of a technology intensive activity such as the one I depicted, but the truth is that most of the salmon workers who are seen as veterans hardly surpass the age of 35. I mean, aquaculture is an activity that can be traced back to the economically viable lifespan of a person in midlife: this is 20 to 25 years ago. The constitution of the salmon farmer has not occurred in front of my eyes and cannot be deduced entirely from the narrative I present. It has a historical development. However, it is a history that belongs to the people I met. They witnessed the changes and, what is more, they perceive it as something they have largely contributed to creating themselves, or to recreate and transform even though for much of the time conditions were changing along with the speed of global events.

Further implications on the performance of salmon farming

The days with a crew have allowed me to experience a bit of the practical constitution of an activity and its links with several entities that cross through it, trout, boats, sea lions, veterinaries, divers and nothing less than the reconstitution of a space for social life. We could think of these novel associations in terms of socio-technical networks (Callon and Law 1989). Indeed, the principle of symmetry, a hallmark of actor-network theory, allows us to depict and level the rusty cages, the manoeuvring of boats and the personal ties among crew members. However, the acknowledgement that they do constitute a socio-technical network that can be described as an instantiation of human-non human composites does not allow us to fully grasp the processual dimension of differentiation and change, only its relational content. Instead, I would repeatedly ask myself: *What is at stake in this particular socio-technical network? What are the elements that put this network to work through time?*

After this long epistemological detour, let us now turn to at least three relevant aspects about the social organization of work and the formation of a particular labour market that can be inferred from these narratives.

Mobility, social organization of work and constitution of labor market

According to data from the Salmon Farmers Association, in 2006, the activity employed 53,000 workers in both direct and indirect labour (contracted services) at a national level (SalmonChile 2006). Of those employees, about 10 % or 5,500 are estimated to be working in the Region of Aysén[10]. The constitution of this labour market in nearly 20 years and the subsequent organization of production has been the result of both the adaptation of previous forms of organizing work in Region X and of novel and localized

strategies that suit the geographical and infrastructural particularities of the Patagonian fjords.

A first remarkable issue that can be deduced from this chapter is the migratory nature of the workforce. As we saw in the case of GrandSalmon (and also in the previous chapter on Puerto Cisnes), there was a qualitative change in the composition of workers along with an increasing quantitative demand for labour. As I mentioned before, just 20% of the company workers came from the closest locality of Puerto Cisnes. A significant number were intra-regional migrants coming from the capital Coihayque or non-coastal towns such as Cochrane, La Junta, Lago Verde and La Tapera. The professional staff, as well as more specialized activities done by divers, health teams and watchmen came from other regions, particularly from Puerto Montt and Talcahuano, both the main ports of southern Chile.

The myth of the unruly fishermen

Any tentative explanation about the composition of labour should take into account a composite of contingency, lack of trained personnel, companies' policies and, not less important, the construction of a myth; the myth that fishermen are not suitable to salmon farming. The sudden expansion of this activity placed companies in a Region which actually did not have a formal labour market for aquaculture. In most regional settlements livelihoods were a modest but a self sustained combination of fishing, cattle ranching and small scale commerce. After all, due to geographical isolation, local settlers had developed in relative autonomy. At the beginning of salmon farming everything was done in almost artisanal fashion, thus pioneers of salmon farming in Patagonia must have struggled to seduce and enrol fishermen and local coastal population in the activity. This actually happened, as described in Chapter Four. Therefore, the primary workforce in the late 80s was composed of local fishermen. But soon the technological turn of companies demanded better trained personnel and different management strategies. Here accounts coming from companies and fishermen are likely to differ. Companies were reluctant to hire fishermen arguing that employment responsibilities did not fit fishermen culture. So the issues of cultural difference were raised as insurmountable. *Cisnenses* have a different view. It is true they withdrew, but their reasons were more the changes brought by a new team of managers. They argued that when new managers arrived, the previous horizontal, though respectful, way of relating to bosses changed. This change was unanimously perceived as a loss by the locals I met. They even referred to a remarkable event which embodied the 'new treatment'. It was in 1997, when, as usual, the yearly party after fish harvesting brought together most of villagers, employees and managers. The party, with free food, drinks and dancing, got wild, ended in some fights and disputes. The aftermath was a long hangover. The company decided to abolish the party and, instead, reward the workers through sober monetary bonuses. The friendly relations with the community were broken, as if they were seen as not belonging to the business. New administrators came from the chicken production branch of the mother company in central Chile to take control of management. They began a process of rationalization including firing many of the locals and replacing them by workers accustomed to wage labour and outsourced personnel. This was the intended consequence of changing from fish to food production, as mentioned by the General Manager Manuel. A completely new type of organization was imported from the agribusiness sector and enforced in a few years. Locals, good with nicknames,

quickly called these new managers *'los pollos'* – the chickens. The key drivers of the process were that of accountability and rationalization of resources.

The reason why Puerto Montt becomes then so prominent in sourcing these personnel is due to the fact that most mother companies of salmon farming and contractors have offices in that city, so they brought trained personnel to fulfil key functions. 'Unskilled' workers were recruited from lists of unemployed people at Coihayque municipality, as well as other inland towns. Just in recent years regional *Liceos* - municipal high schools - in both Puerto Aysén and Puerto Cisnes offer their students technical preparation in salmon farming. Nonetheless, fishermen just recently have started to accept that their sons and daughters could go to work in the salmon industry.

The marked process of differentiation started with the planned introduction of new organizational forms that, at the time, clashed with the gradual and situated process of activity formation. One system of ranks and hierarchies was quickly replaced by another, under the argument made by experts of a tried and tested know-how coming from the export oriented agribusiness of northern Chile. In addition, the decline of international prices of salmon was a final economic argument to trigger an intense outsourcing process.

Of course, some of these 'objective' mechanisms of differentiation were already present in the segmentation of wages and rewards according to hierarchies and duties of industrial organization, but new symbolic ones entered the stage, although also mediated by material signs. An example is the imposition of use of different clothes for managers, the arrival of bosses driving big trucks which were infrequent in town before, and the construction of the brand new mini-neighbourhoods for company staff.

The paradox is that the hierarchical ordering of organization imported from agribusiness does not fit with what can be seen in practice at a time workers need to translate this externally imposed hierarchy to their field of actions. On the surface one can recognize the controlling action of the managerial staff, similar to those of agronomists or experts in export agriculture. It is also true that systems of accountability have been tightened, thanks to technologies such as internet with control over the recording of daily indexes at each farm, submarine cameras that rationalize the food supplies or the electromagnetic submarine frame that gives instant average estimation of the weight gain of fish population[11]. Undoubtedly certain technologies and standards do make a difference, but the way they are accommodated and translated to what is possible or feasible is situated, practically oriented and often follows criteria of sociability. Indeed, the observed social organization on fish farms is rather similar to those expected in fishing activities. Everybody on the boat (and the platform) is equally important because, unlike land based operations, they work in a potentially hazardous environment where trust in personal skills exists, but is relegated to a secondary position where the collective and more horizontal command of the elements is most desirable. In the words of Scottish J.D.M. Douglas, one of the few medical scholars who have recurrently published on the issue of the occupational health of salmon farming:

> *Freshwater and seawater farm sites are chosen for their sheltered locations in order to anchor cages to the sea bed and prevent their destruction by wave action. However they remain exposed to the elements and the workforce must maintain them throughout the year despite the hostile weather conditions. They service the fish cages while standing on narrow walkways. Small and*

> *medium-sized boats are used, thus seamanship skills and basic maritime safety knowledge are essential* (Douglas 1995: 90).

This is particularly true for divers who are exposed to major health risks such as decompression sickness (Douglas and Milne 1991). Indeed, according to data of the NGO "Ecoceanos"[12], between 2005 and 2008 there were 54 deadly accidents and shipwrecks related to salmon farming among which 15 were divers. The risk is bigger in Patagonia, since there are no facilities for hyperbaric oxygen treatment.

The outsourcing process creates another source of differentiation among the workers themselves that goes beyond mere specialization. Since wages are lower for those working in contracted services, I often heard watchmen and outsourced personnel saying they were trying to get a post as feeders within the company. Working conditions in general were regarded as better within the company, particularly in relation to the precarious stability of sub-contracted personnel and the difficulties of mobility for those coming from other regions.

It is a common practice that the wage system has variable components like bonuses and extra working hours. In general this means that workers have average salaries above those of workers outside the industry, but this is basically due to the isolated working conditions that make them accept extra workloads. Indeed, a study done in 2005 shows that in the case of lower ranked workers - *operarios* – only 53% correspond to fixed salary. The rest is made up of variable components (Universidad de Chile 2005). This variable components – bonuses and incentives - have shown an increasing trend due to the flexibility of work regulations (Escobar 2003). In the case of technical staff – *jefes* and *asistentes* – the situation is not better. One of the farm chiefs told me:

> *GrandSalmon "es una empresa grande pero no una gran empresa" – is a big company but not a great company. Salaries are low and chief staff has less guarantees than workers: less effective days off, no pay for extra working hours and they do not cover full expenses to travel home. Moreover work mobility within the company is rather low, so the horizon is what you see from this platform. We´ll hardly get any post with inland management.*

The possibility of getting improvements through unions is dismissed by the workers themselves not because they do not like them, as the company's Human Resources Manager suggested in our meeting, but because it somehow seems to be a painful heritage left from the dictatorship times. Nowadays, the law protects workers and formally speaking a company can not discourage the formation of unions, but workers still fear loosing their jobs. Why was that? I found out later myself thanks to a particular event. I was participating in a Saturday leisure activity organized by the company's *Wellbeing Office* led by some managers and the workers representative. After sports contests, barbequed lamb and the respective award sessions for winners, a speech followed 'inviting' workers who were not ascribed to the *Wellbeing* to join the committee. A few did, but most of them interpret the Wellbeing Office as a company initiative that competes to get workers away of syndicalism and thereby as a clear sign not to join the union. We might recognize here the subtle, apparently harmless, manifestation of anti-union tricks.

Presenting social organization of work as somehow detached from issues of family, groups and community is already an artificial division. For instance, gender relations

among personnel could be thought of as something belonging to both the dynamic of group formation and to the engineering of a particular way of organizing work. Or, how do we analyze issues of career perspectives while not taking into account familial ones? Acknowledging the inseparable dynamics in the constituency of a livelihood with broader concerns manifested by actors themselves, let us turn to a set of aspects that can be united because their links go beyond the organization of work.

Reconstitution of family, groups and community

The current practices related to the organization of work, heavily based on a temporary migrant workforce, made me rethink not just the consequences for families but the concept of family itself. Temporary migration is not a new phenomenon in these latitudes; indeed people from Chiloé have a long tradition of seasonal migration to the south, either to Argentina or to Magallanes, as temporary sheep shearers in the huge *estancias patagónicas*. The distinctive nature of today's migration can be summarized in three points. Firstly, there is intraregional migration from people who did not have livelihoods based on maritime activities; secondly, the inter-regional migration of skilled workers is extended all the way up north to central Chile; and thirdly, a particular shift system that takes people away from their families for up to 3 weeks in a month[13], which entails a complete reorganization of household affairs, the rearing of children, the control of domestic finances and the emotional drain of being away from the beloved. At the same time, the need for affection and the idea of home has been reconstituted under a different membership to groups, teams or crew that share not just working time, but a shelter which is organized pretty much as a household, as I have shown in the cases of the pontoon and the camp.

Another shared concern of salmon farmers is the compatibility of familial relations with career perspectives. We shall count that almost 80% of people engaged in salmon farming are under the age of 40 (Universidad de Chile 2005). A particular time of life, where many are forming their families and others would like to do so. Of course, there are various situations, and even here we are leaving aside those working in processing plants and freshwater facilities, but, for Seawater Farm personnel, there are at least two identifiable situations cross-cut by issues of gender and age: off-shore (in-site) workers and inland staff. Both share the fact that salmon farming has expanded to geographically isolated areas, where even the existence of towns and roads cannot grant accessibility to many 'modern' services. But, as we have seen from the narratives, most inland personnel (particularly managers) live with their families. That is hardly the case of off-shore personnel, with the few exceptions of those who are from Puerto Cisnes or have married a local. The policy of the company in this regard is highly discriminatory and points clearly to efforts on preserving the top managers within the company through the active mobilization of "perks", which include employing wives, facilitating means of transport, including the onerous use of small aircraft, provision of housing, and other benefits, etc. But manager's wives are not passive recipients of company policies. They want to play an active role in the relation with the community and bring their own ideas of 'development'. Somehow, these young professionals understood that their roles were not in the sales-oriented jobs they were given by the company and, instead, convinced the board of directors to become the primordial arm of corporate social responsibility. Backed up by their husbands they run a series of initiatives in conjunction with the school, church and municipality (in this order), intended to contribute to the

development of Puerto Cisnes' children and to improve the local perception of the company. We are not discussing some naïve and voluntaristic assumptions about development, nor some opportunistic uses that people make of these resources.

We find a different scenario for off-shore personnel especially among the younger staff whose main concern is related to the difficulties of having fun and of getting a girlfriend/boyfriend in town, as compared to the elders of 30+ whose distance from their beloved in quite a number of cases ends with broken marriages. Additionally, fish farm professional staff does not see a clear policy of upstream mobility to inland operations, or to managerial levels, something they regard as really discouraging for their long term career perspectives. In Chile there does not seem to be an active government engagement with strengthening rural communities, and certainly not in the south. This is in sharp contrast to Norway that prioritized regional allocation and rural livelihood due to the early political engineering of salmon farming through a license system. This was translated to restricting the activity to those isolated areas where the rural population was declining (Aarset 1997; Sønvisen 2003). Indeed, I am sceptical of seeing, especially in Chilean Patagonia, an early stage towards an externally (institutionally) geared transition that would reinforce the actual settlements and perhaps create new ones. Instead, I have shown how this process is currently changing certain patterns in the local community, in the manifold ways this mass of workers and its performance of activities shape new ordering of social life. First of all, although locals clearly defined themselves as *cisnenses* in contrast to newcomers – *afuerinos* -, quite a number of them got married and currently live in town. There is a slow but sustained process of integration of non-locals, so issues of identity and identification are being challenged. Second, against the sustained complaint of locals that salmon farming has brought nothing to town, I witnessed a burst of small services and commerce that provide off-shore workers, when they are in transit, with housing and food, entertainment, telephone and internet services, and essential goods such as tobacco, *yerba mate* and alcohol (forbidden at the camp).

On the other hand, when I examine the formation of new groups and the constitution of social ties both within the camp and at the platforms, I have found that they create a range of unruly spots of interaction and exchange that are actively taken up by personnel from top to bottom, in order to break the stiffness of organizational charts which cannot be totally linked to working relations. These 'safety spots' are not just found in leisure activities, like when they play football, table tennis or notoriously when they drink-chat some rounds of *mate,* but also at the production sites where many practices subvert the functionalist nature of company organization. In this case, one can also notice practices of group formation when they show serious concern at the work place for the state of 'their' fish, for instance during health outbreaks. They often do more than expected, no matter if this is motivated by the pursuit of economic bonuses, their feeling of belonging to a team or sometimes joint complicity against the managers. The point I want to make is that we should not restrict the involvements of workers with job duties as something merely tied to the exchange of labour force for an income, but we also need to pay attention to the whole array of social relations that makes their lives meaningful.

Doubtless, the practice of drinking *mate* plays a role in this regard. The beverage gives the workers a strong sense of wakefulness, focus and alertness which for routine tasks under hard climatic conditions is very important. In addition to its well known

physiological effect as stimulator, *mate* seemed to have fewer side effects than caffeine, such as anxiety and gastritis. But apart of its properties, we should also count the symbolic function of bringing people together in a non-hierarchized practice of drinking from the same hollow gourd. Being invited to share *mate* is a sign of being included in the group, once you accept you must leave aside hierarchies and ranks to be subjected to the humour of the group. The tone is always respectful, but playful; *se echa la talla* – they make fun of (things, people). Irony and improvisation in the utterances of teasing and jokes prove people's capacity to be both engaged in the collective performance and to be humble when it is your turn to be teased. Certainly *mate* is the top drink of Patagonia and there always is a secure provision of it. Even though its social function on group formation and identification goes beyond the beverage, the only way to access its symbolic function is performative while drinking with the group.

Another striking aspect is the normative use of gender relations by the company. Being at close quarters for long periods of time was becoming troublesome in certain male dominated crews and some aggressions and lack of discipline were reported. According to Adriana, the company's human resources policy is to increase the number of women employed as assistants and feeders, particularly at pontoons. She relates this strategy not only to good evaluation of women's working performance in the field but explicitly to its good effect on softening the relations among male personnel. In practice, according to Teresa, one of the pontoon members I worked with, this was not translated into a household 'division of labour' of women in charge of domestic affairs, but in the efforts men made to be less rude and more caring in matters of daily coexistence, such as house order and cleanness. This example of social engineering of groups can be complemented by another normative use of technology. The case of payment through bank cards is particularly illustrative for having effects that go beyond the organization of work. The implementation of this mechanism was intended to discipline the salary management and behaviour of all married (mostly male) personnel. For quite a number of married workers it meant giving the monetary control of their incomes to their wives who could now dispose of all aspects of the household economy. For some of the single workers the introduction of the bank card was an undesirable imposition since it did not allow them quick access to money to have fun, and their frustration was later expressed in buying expensive clothes, sport shoes, iPods, and other fashion items.

New (economic?) settlements

Are we facing a new form of settlement in the Patagonian fjords? Can we call settlement something which was intended as a unit of production? The point that nearly 6,000 people are making a living from salmon farming in the Region of Aysén would not constitute a solid argument, but merely a quantitative toll. Indeed, one of the things that really struck me was the time I was invited to be a judge at a local painting contest for children organized by the librarian of *Puerto Cisnes*. There were something like 40 enthusiastic children of different ages. In the paintings I found no single reference to salmon farming at all. Instead, I could identify many fishermen's boats, the beach, some local buildings, the omnipresent local mountain *Cerro Gilberto,* etc. These children's views reflect the invisibility of the activity. The fact that most of what is going on does not happen ashore but far away in inner seas of the fjords. The perception many villagers have about salmon farming is very much the same as of those of the children. From the land you just see a small fraction of the complex logistics associated with

these physical units, called *Centros de cultivo*. Partly, this physical distance from lay people who do *not see* the activities carried on at the sites of production, downplays its importance in terms of both its local constituency and the situated space of social relations. But, what does it entail for fish farm workers? What does it mean for them to live in these sites?

Being at the platforms and confronted with the everyday life makes you change the picture. The fjords, inlets, glaciers and islands constitute an impressive landscape. But the truly striking moment is when you realize that it is a landscape put in motion by a complex combination of agents. There is a frantic dance of different types of boats; ships, ferries, trawlers and small watercrafts, all of them ceaselessly supplying people, services and materials. There are quite a number of animals interacting with the platforms, boats and camps such as dolphins, sea lions attacking the cages, all kind of birds perching on the fences, minks, and what to say of trout and salmon. There are also different weather conditions that constantly reshape the settings and alter the way people cope. The enormous logistics behind this process is not the most impressive part, but the complicated in-site manipulation of a combination of technologies to deal with supplies, processes of production and the lives of workers.

Keeping records of the names of boats was something I have done to understand the way naming such entities, e.g. La Anaconda, Queulat, Fiordo, Pablo II was equivalent to knowing what type of boat it was, who was the pilot, who are the crew, how many times a week it is expected and what type of supplies or kind of people it was bringing. They do not name the crew, but the boat, and with the naming there is a tacit understanding of what it entails. In a Latourian sense, we could say that they are boats with agency. Knowing this could make a difference between going home or staying longer, problems like visits of certain experts, shortage of supplies, etc. Moreover, there is an extraordinary ability to cope with different means of transport; they are adjusting all the time.

People do not just work at fish farms and make a living of it, they live on camps or pontoons, they spend a great part of their time together and as such they try to make the best of this experience in many senses. This is shown through the impossibility of describing a routine task performed in the fish farm sites without making a reference to something that goes beyond the organization of work. There is a continuum between the camp and the platforms and between the platforms and town. Sometimes this continuum is expressed in the permanent motion of boats connecting sites, in the networks of relations that put things to work or even through satellite waves coming in. As an illustration of the latter, I remember once *jefe* Claudio hanging on the fence in one of the corners of the platform with a mobile phone in his free hand. He had discovered the single spot in the whole area where mobile phones got network connection. It was his wife's birthday. Are platforms clear-cut economic units? What is a settlement? Is it perhaps the ability, sometimes the purposeful action to make it closer to home?

Conclusions: a plea for the democratization of experience at the workplace

The ethnographic description of the sites of production of salmon and trout in Chilean Patagonia has led me to advance an interpretation that stresses the importance of

sociability and solidarity in terms that go beyond the mere organization of work and the process of commoditization.

Methodologically, this chapter proposes to interpret the normative, albeit processual functioning of salmon farming as part of a semi-autonomous social field, in which the generation of rules, norms, standards and customs are mutually constitutive of the practical activities carried out by social groups. Complementary, I have essayed a possible way forward in the understanding of livelihood through the thorough distinction between labour and work formulated by Hanna Arendt.

Throughout this chapter I have attempted to show that the social organization of salmon farming depends less on the industrial standardization of procedures and hierarchies than on the modulation of an environment, the construction of ties, the forging of loyalty and the workers' creativity to associate with a disparate range of entities in motion.

Hierarchies do not exist by the 'very nature' of capitalist organization, but they need to be worked out through the mobilization of symbols (clothes, cars, boats, offices) and the performance of ritual actions of expertise (doing fish necropsies, asking reports, handling instruments, etc). However, there are many ways in which these hierarchies are subverted by and subdued to the will of the 'subordinated'. As we have seen in the everyday life of the camp, the hierarchical interaction with managers or team leaders are often broken through certain practices, notoriously when they drink *mate*. At other times hierarchies are reversed, when the legitimacy of orders based on claims of truth are executed by crew members only when they agree on the practicability of such order. Moreover, the settings, materialities, and practical activities are not bound to the production of the commoditized fish, but linked in a continuum with town, families and other activities through different networks. The latter has been crucial to broaden our previous understanding of salmon farming from an activity that existed only in terms of a particular labour market, a commodity chain or a livelihood to understand it as an activity transformed in different social values through the meaningful experience and creativity of its workers.

It was in this direction that the plea for the democratization of experience was made by Edward Reed in his outstanding book (1996): "The Necessity of Experience". Reed shows how western philosophy has degraded firsthand experience and proposes a pragmatist reversal based on the enhancement of experience at schools and the workplace:

> *The purely automated work process is, has been, and will continue to be, a myth: even in mechanized workplaces, personal skill, however invisible or undervalued, is essential. We need to ask why skill is deemphasized by the mythmongers, who instead falsely emphasize the infallibility of mechanism. Why is our contemporary culture so resistant to celebrating the fallible but real skills of people and so passionate in its celebration of mechanistic performance?... From a manager's perspective it is not the workers who machine and finish the products; it is the workplace that machines and finishes the workers. But why has our society – and especially why have our intellectuals and educators – succumbed to this narrow managerial perspective? Where are the defenders of everyday experience?* (Reed 1996: 62-63).

Later, delving into the issue of sharing experience, he adds:

> *Echoing Dewey, I assert that communities are made of activities that broaden and deepen real sharing. Real sharing is not the matching of ideals – whether spontaneous, forced, coaxed, or inculcated. Real sharing is acting and experiencing together. This is the opposite of the machining process. There, people´s experiences are made to fit into pre-existing ideas: a boss's flow chart for a workplace or a rigid educator's micromanaged curriculum. But in a real community of people who are trying to join their actions and experiences one sees shared exploration and performances, the attempts to locate meanings and values that can be made to* ***work together*** *(which does not mean that values match)* (in bold author's emphasis, Reed 1996: 115).

My contention is that salmon farming workers have largely contributed to creating the makings and doings of the activity that allowed the impressive take off of Chilean aquaculture by developing the in-site skills and knowledge. Entrepreneurs, managers, experts systems and technologies are part of the assembly, but the translation of their desires, rules and capital has occurred thanks to the redistribution of workers' capabilities in the form of the domestication of salmon and trout. The development of these skills and dwelling adaptations do not necessarily go vis-à-vis with the same degree of recognition and improvement of working conditions and raise serious issues of vulnerability and sustainability. The interpretation offered in this chapter do not exhaust the many vertexes from where we could look upon these aspects but they extend the responsibility of the social sciences and the importance of ethnography to show how the creative role of people shapes and challenges the capitalist enterprise as much as it shapes people's everyday life.

Following salmon farming workers at different sites in Patagonia has shown the way actors create, perform and organize the production of a regional exportable commodity. The next chapter delves into an international trade controversy around salmon exports in order to explore how different actors compose networks to keep salmon trade working.

Notes

[1] *Centro de cultivo* is the name given in Chile to the production unit of salmon and trout generally associated with two floating modules of net-pens that contain fish in its seawater phase of growing-out until commercial weight.

[2] According to Forster, this technology is a low-cost way of managing large volumes of water for aquaculture. It consists of a cylindrical or box-shaped netting bag suspended from floats in a sheltered body of water where currents, created by wind or tide, cause water to flow through the net meshes. Cage designs vary widely and they can be made of different material, but they all adhere to the same basic principle (Forster 2002).

[3] According to the Encyclopaedia Britannica *Yerba mate* is a tea like beverage, popular in many South American countries, brewed from the dried leaves of an evergreen shrub or tree *(Ilex paraguariensis)* related to holly. It is a stimulating drink, greenish in colour, containing caffeine and tannin, and is less astringent

than tea. Drinking Mate is a common social practice in Argentina, Uruguay, Paraguay, southern Chile, eastern Bolivia and Brazil.

[4] Keeping record of ships and boats' names is more than anecdotic because when both salmon farming workers and local fishermen refer to them, there is a tacit understanding of the function and the crew associated to a specific vessel.

[5] By the end of 2006, one year after fieldwork, the Chilean branch of the Sognekongen Company, Aysénexpress, stopped the service and went bankrupted. Although the catamaran matched an increasing demand, the high costs of operations found an economic barrier in the prices people were willing to spend. Those prices were already higher than ferries and rising prices incline the balance in favour of the latter.

[6] An interesting description of Melinka around 1940 can be found in the words of the Patagonian Explorer Augusto Grosse: "The archipelagos of las Guaitecas and los Chonos are composed by thousands of small uninhabited islands. Only in the septentrional border of las Guaitecas, we found Melinka, a small village of circa 400 inhabitants that was slowly formed through time. Cypress forests were cut by axe and fire without any plan or control which led it almost to extinction. Nowadays, the current population makes a living fishing, gathering shellfish, and to a lesser extent, of the hunting of fur animals." (Grosse 1955: 11)

[7] The idea of affordances of the environment is found in the work of James Gibson "The ecological approach to visual perception" As a definition Gibson stated "The *affordances* of the environment is what it *offers* the animal, what it *provides* or *furnishes* either for good or ill. The verb *to afford* is found in the dictionary, the noun *affordance* is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment" (in italic author emphasis, 1979: 127). Ingold note that Gibson' approach was later known as "ecological psychology" (Ingold 2000: 165).

[8] This idea is masterfully presented in a Wittgeinsteinian interpretation of context made by Theodore Schatzki (Schatzki 2000)

[9] Inspired in Schatzki' s work "The Site of the Social: A Philosophical Account of the Constitution of Social Life and Change (2003).

[10] Personal communication by Carlos Odebrett, the representative of SalmonChile in the XI Region.

[11] Workers at the platform called this device "*el estorbo*" (the hinder) in a play of words that makes reference to the Norwegian brand that supplies it -'Storvik'- and its complicated manipulation. Although the frame technique seems effortless if compared with previous manual mechanism to sample fish, crew members don't like it because they feel its use is something which is left to the whimsy will of managers.

[12] The information was provided by Isabel Díaz from the NGO Ecoceanos. They recorded all the deadly accidents of the salmon farming industry specifying date, worker' name, activity in which the accident happened, place and company. They gathered this data from different organizations such as Dirección del Trabajo, Directemar, Mariscope and Prosecution officers in Region X and XI.

[13] In the field I recorded longer periods of up to 50 days in-site due to non-voluntary causes such as storms or quasi-voluntary when some workers ware taking someone elses shift to receive extra income.

8

Lobbying Networks

This chapter[1] delves into how controversies are deployed and the associative creation of networks that bring them into actuality. In other words, it refers to the work of netting, the movements and activity required to build a web of interactions on issues in dispute. Specifically, the chapter is about the *lobbying of networks*. It draws on a case that follows the mobilization of resources by various actors to influence regulations in a controversy over international trade that affected salmon farming markets, and which developed simultaneously at multiple locations. The case focuses on the deployment of political articulations, corporative strategies and actor's tactics to breach commercial barriers in current global trade arenas. On February 4, 2005, the European Commission (EC) announced a precautionary imposition of commercial safeguards for farmed salmon imported from Chile, Norway and the Faeroe Islands. The measure, they argued, was intended to stop declining prices affecting European Union (EU) producers from Scotland and Ireland. A joint choir of Chilean entrepreneurs and politicians presented the news through the media as a major crisis hitting one of the most successful Chilean exports. I confronted this event while doing ethnographic fieldwork on salmon farming in the Patagonian fjords and was able to follow the succession of events from the fish farm platforms in southern Chile up to the disclosed counteractions of experts in Norway and at the Chilean embassy in Brussels. I argue that *practices of lobbying* and *the performativity of international trade* include an active deployment of counter measures, symbols, settings and social relations among experts, which are constitutive part of the global flow of commodities as much as cargo, packaging, quality standards, and the existence of consumers. This *politics of lobbying* is nurtured by the brokering role acquired by the State to maintain and sustain free trade activities frameworks. Methodologically, the chapter reconstructs the development of a case of trade safeguards applied to farmed salmon imports by the EU while at the same time acknowledging the usefulness and limits of carrying out such research using an ethnographic approach and multi-site fieldwork.

Encountering 'a case' and path-finding tactics

> *'Salmon farmers on alert due to possible trade restriction from Europe'* (La Tercera, October 28, 2004).

This statement was the headline of the business section of a nationally circulated Chilean newspaper. I read it during a flight to Aysén en route to my first period of fieldwork. The news warned of the likely imposition of safeguards to non-EU imports of Atlantic salmon. EC teams, at the request of Scottish and Irish producers, were investigating the issue. Although at that time Chilean exports to the EU represented less than 8% of the total EU salmon market, salmon farmers were concerned about potential trade barriers from this market, which they had targeted for higher shares in the future. The news was my first encounter with a case that I later followed at multiple locations, but at that time it remained insignificant in the shadows of my excitement with getting settled in Patagonia. Three months later, back in the city, another newspaper front-page heading caught my attention:

> *'EU strikes hard against Chile: safeguard measures against salmon approved'* (El Mercurio, February 5, 2005).

This time, the information was widely published in all major newspapers and prime-time TV news extensively covered the measure announced by the EU Commission, the deceit of salmon farming entrepreneurs and reactions of higher government officials. The EU, who until then had been a reliable partner, especially since the signing of the Association Agreement 2002, now threatened "the darling" of the Chilean export-oriented economy. As humorously portrayed in a Chilean press vignette (Fig. 1), salmon dreams of touring Europe seemed to be fading.

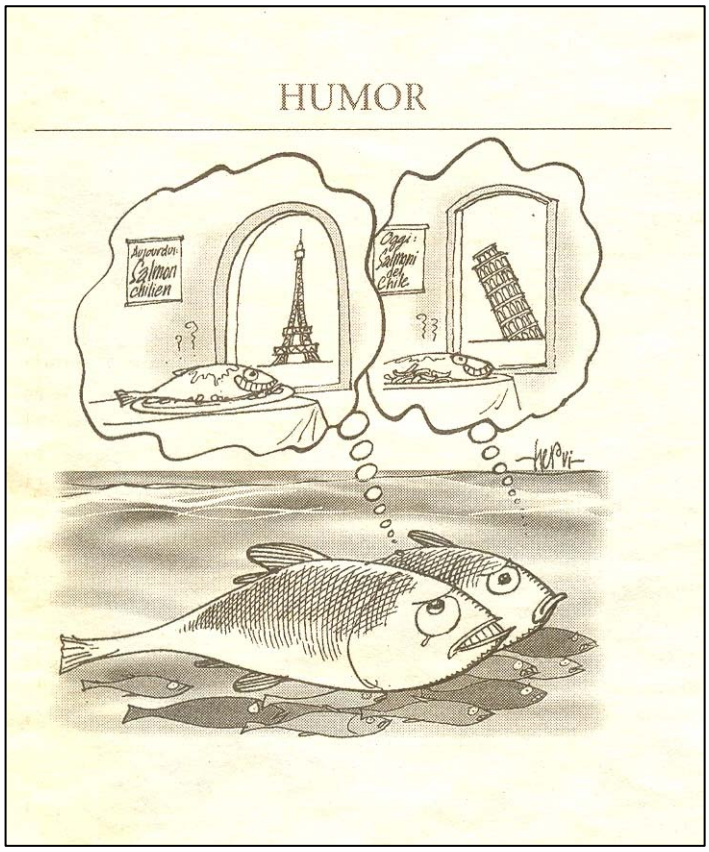


Figure 1. On EU safeguards applied to Chilean salmon, by cartoonist Hervi.
Source: La Tercera, February 8, 2005.

The announcement of the decision through an EC regulation and its subsequent amplification by the Chilean Press - and surely Norwegian, Faeroe, and British press also - echoed those many voices that were trying to have a say in the matter. In this sense, it was a multi-local event. A discursive statement in the form of a technical document and the utterance of a high official in Brussels triggered a chain of distant actions. However, 'the safeguards announcement event' is just the visible effect of a less visible process that started long before, as well as the beginning of a series of counter actions.

The whole process implied an escalation of the controversy, enrolment and allying of new partners, and the use of various means that eventually lead to unforeseen results. In the following pages, I will try to reconstitute what triggered this process and the lobbying network assembled to represent the controversy according to various interests. I will also pinpoint methodological issues related to the difficulties of research in a variety of settings and research that follows distant actors. Both the acknowledgement of limited observable information and the researcher's intuitive manoeuvres to overcome this gap imply what I refer to as path-finding tactics. In other words, for the researcher these tactics involve the necessary openness to carry out unplanned courses of action and to seize research opportunities when confronted with novel directions. In Chapter Two I have stated that encountering a case, such as a trade lobby, is tremendously influential in fixing a phenomenon. The role of contingency in encounters should not be downplayed when reconstructing and re-presenting a case. Making the researcher-phenomenon encounter explicit reminds the reader of the non-essentialist character of phenomenon, and the fact that phenomena are also the result of the partial connections made by the researcher. Now, some words about lobby.

What is lobby?

According to the Merriam-Webster Dictionary, the etymology of lobby as noun comes from the Medieval Latin word *lobium*, which was a gallery, a passageway or waiting room, particularly an anteroom of a legislative chamber to which members go to vote during a diversion. It makes sense then that the second meaning of the word as a noun drifted from a description of the spatial to a description of the group of people that make use of such a location, engaged in influencing decisions in favour of specific interests that are later voted upon in the chamber. From there comes the verb *to lobby* which means to attempt to influence or sway (over public official or legislators) toward a desired action.

The practice of interest groups influencing decision-making is identified as a common feature in modern theories of democracy and extensively documented in the United States by political scientists under the heading of 'Interest Group Influence' (Ziegler 1964; Holtzman 1966). In these early works, the study of lobby focused on the process of policy formation at a national level. Liberalism was the accepted frame in a state whose political tradition did not question that the interests of a few, invariably belonging to political or business elites, could be represented (Pitkin 1967: 190). However, in recent times, the study of lobbying expanded to also include multi-level advocacy (Baumgartner 2007), multinational conglomerates (Mazey and Richardson 1993; Coen 2007), international institutions (Princen 2007), and NGOs (Dür and De

Bièvre 2007a). Of course, such studies encompass business lobbying in international trade arenas (Gerlach 2006; Woll 2007a; Woll 2007b). For obvious reasons, the vast literature comes from political scientists and business economists and, to my knowledge, no research from sociology and anthropology has been done on the issue. The shift of the locus of lobbying to multilateral and international arenas is part of the process of reallocating power relations in multilateral institutions that we refer to as globalization. Nevertheless, if we reckoned that the space for influencing others is not the 'anteroom' alone, important questions of conceptual and methodological consequences emerge: where does this practice occur? Where is the *lobium* located in contemporary international settings? How do these relations stretch across national boundaries and yet still defend local interests? How do lobby networks change our notion of power? What are the consequences of practices of lobbying for social change at the grassroots level? These are among the questions that need to be tackled by a sociological gaze with an ethnographic foundation. I hope that after presenting the case, I can reassess our notion of lobby.

A public chronology of the 'Safeguard case'

The following narration of events aims to give a sense of how an interested outsider could have followed the safeguard case as it unfolded over time while restricted to public secondary sources. It is the public face of this story. The media records and official documents collected by the researcher are the main source of this account[2]. For now, I want to stick to these sources but later I shall re-present the less visible aspects of the case, obtained through interviews and ethnographic material.

On February 4, 2005, the European Commission (EC) announced the imposition of safeguards to farmed salmon imported from Chile, Norway and the Faeroe Islands. The protectionist measure was laid out in a 22-page technical report and made official through its publication in the EU Official Journal [3]. The safeguards implied the fixation of Minimum Imports Prices (MIP) for fresh and frozen salmon and a differential tariff quota to each exporting country for a period of up to four years. In the case of imports coming from Chile, the quota meant that importers would pay surcharge of € 0.51 for each kilo above a tariff-free quota of 16,033 tons (WFE[4]). Safeguards were devised by the External Trade EU Commission under a requirement of the British and Irish government in petition done one year earlier on behalf of a group of small and medium size producers whose revenues were threatened by declining prices (European Commission 2005a).

The Chilean Salmon Farmers Association (*SalmonChile*) and the Chilean government condemned the safeguard publicly through various media. The Chilean Vice-Ministry of Foreign Affairs asserted:

> *We will take all possible actions to revert the arbitrary and unjust imposition of safeguards on Chilean salmon. We do not discard appealing to the WTO* (Vice-Ministry Patricio Santamaría, El Mercurio, February 6, 2005).

Salmon Farmers' representatives claimed that Chilean frozen salmon, the main commodity exported to Europe, did not compete with fresh salmon from Ireland and

Scotland. They argued that frozen salmon has different consumers, price fluctuations, and distribution channels. The General Manager of *SalmonChile* stated dramatically:

> *They (EU Commission) have cut our wings* (Rodrigo Infante, El Mercurio February 5, 2005. See Photo 24 in Annex 4).

Peter Mandelson, the EU Commissioner- in Charge for External Trade, argued that the measure equally considered the interests of all economic agents, and that a safeguard was the tool chosen in order to include an element of price to reverse the main problem for EU producers. As formulated in the EC report, the impeccable logic behind the safeguards can be neatly laid out as follows: i) EU producers (Scottish and Irish) would benefit from higher prices, which should allow them to increase their efficiency in the mid-term and become more competitive by the time the measure expires. If measures are not taken to protect the sector many jobs are endangered; ii) Non-EU exporters (Chileans, Norwegians and Faeroes) should be able to obtain higher prices since they are evidently selling below cost; iii) EU importers/processors would pay a higher price. However, they do not need to absorb the price rise by themselves but can transfer it to consumers. Jobs in this sector are unlikely to be cut because the commodity price would rise only up to its historical average; and, iv) EU consumers would have to pay more. Although, retailers would probably help to keep prices low since they have more room to manoeuvre pricing (European Commission 2005a).

Norwegian producers were hit the hardest due to their higher share of the EU salmon market that amounted to approximately 60%. They already suffered with provisional anti-dumping duties imposed to salmon exports by the EC. Thus, in addition to facing safeguards they were troubled from another flank when the EC opened a parallel process of definitive dumping duties against them.

At the other side of the story, a group of small and medium size EU producers from Scotland and Ireland welcomed the measures taken by the EC. They did not represent all Scottish and Irish producers but only those organized under the European Union Salmon Producers Group (EUSPG). In fact salmon farming in Scotland was largely controlled by Norwegian companies who were opposed to the safeguards.

Three days after being informed of the measure, the Chilean government announced that it would present an appeal to the Dispute Settlement Body of the World Trade Organization (WTO). Spokespersons at that meeting were the Head of the Economic Office for Foreign Affairs and the Chief Representative of *SalmonChile* (see Photo 25 in Annex 4). The press covered the announcement extensively. One day later, the now joint team of government officials and salmon industry representatives announced that parallel to the WTO channel they would follow a second strategy: to appeal to EU members with strong interests in the salmon processing sector, such as France and Denmark, to counteract the measure at the EU Council level. A diplomatic network for counter-lobbying was established in all Chilean embassies in European states. The Norwegian government and salmon farming spokespersons announced that they would follow suit and close contact between representatives of the two countries was announced.

Meanwhile, in Chile a series of provisional assessments bombarded the media warning of catastrophic consequences for the industry as well as for regional and local

economies. International trade experts from different disciplines made relevant comments through different media. Parliamentarians from different political factions manifested their support and concern in the Senate and in the Deputy Chamber. Entrepreneurs elaborated various scenarios about the differential effects to their companies but, in general, they merely presented pessimistic outlooks for the future. In search of more precision, the Undersecretary of Fisheries published a technical report that made an official evaluation of the safeguard effects (Subsecretaría de Pesca de Chile 2005). In the meantime, salmon prices were climbing due to the safeguards and both Chilean and Norwegians exporters enjoyed temporarily higher revenues.

Two weeks after the safeguard notice, the EU Commission 'accepted' a round of consultation together with the Chilean government and hosted by the WTOs' Dispute Settlement Body in Geneva. At the same time, the diplomatic delegates from Chile, Norway and Faeroe Islands in Brussels announced their joint coordination to counteract the imposition of safeguards. Among EU members, the Danish Ministry of Foreign Affairs was the first to announce an appeal to the EU Council to revoke the measures. This decision, he argued, was taken because the safeguards were a threat to many Danish interests. The most important points he mentioned were that the Faeroe Islands were a protectorate of the Danish Kingdom, the Danish salmon processing industry was highly dependent on salmon imports and there was a threat of job cuts, and the strong commitment of the Danish government to free trade. A few days later, France joined the Danish appeal and the Spanish government officially declared that it would support the Chilean position. Thus, the strategy of the 'EU Council channel' was countered by three Member States. This meant that even a minimum of opposition by Member States voting against the safeguards at the Council would be enough to block the measure. Meanwhile on the WTO flank in Geneva, Chile and Norway decided to have a joint round of consultations with the EU Commission. The External Trade Commissioner was under siege. Nonetheless, on March 22, 2005 after just one and a half months, the EU Commission announced the likely imposition of a definitive anti-dumping duty of 16% on Norwegian salmon. The Trade Commissioner struck back. Norwegian representatives rejected the dumping accusation stating that EU Commission had manipulated data. The Chilean entrepreneurs and government submitted a joint declaration of solidarity:

> *In a free trade framework, we acknowledge the extraordinary competitiveness and efficiency of our producers. Therefore, we have decided to fight, together with Norway and other EU states, against all forms of protectionism and to protect the interests of our industry* (Ignacio Walker, Chilean Ministry of Foreign Affairs. Aquanoticias, March 22, 2005).

At that time, Chilean president Ricardo Lagos was travelling to Europe to make official visits to four countries. The media reported that Lagos' agenda in Europe was set up to discuss the salmon safeguards case[5]. In Geneva, a three party round of consultations was held amongst Chile, the EU, and Norway. It was the first step in the WTO Dispute Settlement procedure. However, for Chilean and Norwegian interests, the talks were not successful and, therefore, a Chilean team of experts moved towards step two: the constitution of a Dispute Settlement Panel. Trade representatives for EU member's states began to shift their strategies given the contentious development of the safeguards case. They met at the EC Anti-Dumping Committee to set forth a replacement to safeguards for anti-dumping measures directed only to Norway. On April 23, 2005, two and a half months after the initial safeguard announcement, a one-

page EC regulation revoked the measures (European Commission 2005b). However, the revocation confirmed and sustained anti-dumping measures against Norwegian salmon. Imports from Chile were freed from safeguards: the counter-lobbying mission was accomplished. Despite the uneven results, Chilean and Norwegian producers signed an agreement aimed to strengthen cooperation for the defence of free trade practices. End of story. At least, its public face.

Brief comment on trade defence instruments

Understanding what had happened may require this brief comment as to the technical definitions of trade defence instruments suitable enough for sociologists unfamiliar with international trade jargon. A first distinction is needed between safeguard and anti-dumping measures. *Safeguards*[6] are instruments applied to a *product* in order to protect a specific domestic industry from an increase in imports of that product, which is accused of causing or threatening to cause, *serious injury*[7] to the industry. Whereas *anti-dumping* measures are duties applied to product imports of a specific *country* when it is proven that their prices are below production costs. A third instrument is *anti-subsidy*, which is intended to counteract the specific effects that foreign subsidies can have on import prices and thereby affecting domestic industries or producers. As Hindley points out, in practice anti-subsidy is often deliberately confounded with anti-dumping, since dumping is difficult to prove, whereas subsidies can be more clearly identified (2007: 4).

Anti-dumping practice has proliferated worldwide, but it has also changed the national composition of its practitioners. As illustrated by Hindley:

> *The WTO reports that a worldwide total of 2,938 antidumping actions were initiated in the period from 1 January 1995 to 30 June 2006. The EU contributed 345 of these and the US 366. These levels of activity suggest a substantial burden on international trade. The prominent presence of developing countries in WTO reports of antidumping activity provides a final reason for reflection by the EU and by rich countries in general. In earlier periods, almost all reported antidumping activity was by rich countries. In the last decade, though, the position has radically altered* (Hindley 2007: 2)

In general safeguards are more difficult to apply than anti-dumping measures. This is partly due to the prevalence of liberal thinking amongst economic authorities, who have a hard time justifying the use of trade instruments such as safeguards. Safeguards are strictly defined as protectionist measures whereas anti-dumping measures are defined as 'part of the corrective mechanisms of imperfect markets' (Hindley 2007: 7). For instance, the EU has imposed only eight definitive safeguard measures under WTO rules (idem) which is related to the difficulties within the political procedure and with the unintended consequences of protectionist policies. As shown above, the fact that developing countries are also making use of such instruments has transformed trade defence into a risky business within free trade frameworks. Moreover, the protectionist measures based on national or territorial claims are weakened by the increasing presence of EU (or US) companies operating supply chains beyond the EU market. The de-territorialisation of transnational companies adds further complexity for trade defence decision-makers as they are increasingly confronted with having to balance cross-interests: protecting a territorially relevant industry (i.e. Norwegian salmon farming) versus protecting businesses that are transnational in scope but still owned by

nationally-based companies (i.e. the Norwegian seafood transnational, *Panfish*). Complexities due to the inability to control all factors and actors of international trade has implied a process of shifting from de-regulation as the overtly stated pillar of liberalization to sophisticated and subtle types of protectionism, sometimes through 'private' civil court actions and awarding damages (Raikes et al. 2000: 400). Anti-dumping has become another *resource* available to local producers in one part of the world to be used against producers elsewhere, a procedure legitimized by international trade regulations and facilitated by practitioners (market regulators).

> *The more general shift from tariffs to anti-dumping as the preferred form of industrial protection is also a highly relevant, but largely unremarked, factor in the development of Global Commodity Chains, especially in view of its known role as a means to shoehorn the recalcitrant into voluntary export restraints* (Raikes et al. 2000: 400)

These voluntary agreements for export restraints are known as *undertakings,* which are proposed in negotiation rounds amongst the affected parties. However, they are under intense pressure by the executive body of regulations that could impose more severe measures if voluntary agreements are not forged.

A further element of complexity is that, contrary to the language of precision spelt out by technocrats, the procedure to prove dumping, what Hindley refers to as the *Anti-dumping Arithmetic*[8], is very complicated and relies on a number of technical definitions and the performance of calculations that could be subject to errors and, of course, manipulation (2007: 5-6). To a certain extent, the justification of actions in very technical language and the apparently rigorous calculations are part of the sensitivity of anti-dumping practitioners (anti-dumpers in trade jargon), since in free trade frameworks they are aware that they are not held in high regard relative to the market competition authorities. Therefore, as Hindley suggests, the anti-dumpers sometimes react to this lack of prestige by suggesting that their activities are *really* part of competition policy (Hindley 2007: 3). The increasing sophistication of this 'anti-dumping arithmetic' suggests that it is an interesting object of study in its own right but this goes beyond the scope of this work. However, it does demonstrate that we are witnessing a proliferation of experts as practitioners who spend most of their professional time perfecting the means of expertise – procedures, rules, systems of calculations, and technological artefacts. In these cases, the *means* of work becomes a labour demanding *end* of expertise.

The deployment of technical language and its proprietary use by actors is part of the performative side of international trade. Rules, instruments, sanctions, complaints and appeals need to be enacted and not just transformed into text. The 22-page document itself embodies the core of the technical work done by the Trade EC team prior to the official announcement of the safeguards (the justification of trade defence, technical calculations, sanction specifications, procedures, the time schedule, meetings, etc.). It also contains the EU producers' joint work to foster a complaint and, as I will show later, the disappointment of non-EU producers that their underground negotiations were unable to stop the measures.

The salmon safeguards case was the effect of many interactions of a political nature whose main objective was to express the discontent of EU producers with the increasing share of non-EU salmon imports that they blamed for interfering with the

salmon market. However, during the negotiations counter-lobbying actions by both Chilean and Norwegian teams acquired significant symbolic value that had practical consequences: three EU Member States questioned the measure, which was enough to weaken the political position of the Trade Commissioner. The division of EU members over the salmon market issue led the British parties to accept the only viable political alternative left: the anti-dumping measure. Actors re-accommodated their strategies and, this time, the Commissioner targeted Norwegian salmon with rigorous specificity. The abrupt turn from safeguards to anti-dumping measures demonstrates the firm intention of the Trade Commission people in Brussels to comply with a mandate to protect not only their *producers* but also, and particularly, their *procedures*[9].

Crucial for the performance of these actions was the city of Brussels. A closer look at the actors involved and the settings where decisions were made, allows us to sharpen the analysis. Let us now visit Brussels.

Brussels, the grand lobby hub

Lobbying practices cannot be encapsulated within a single framework of institutionalized relations between interests groups and governmental bodies such seems to be the institutional view of some authors (Dür and De Bièvre 2007b). There are others orderings that enact lobbying practices differently as well as a wide array of settings that allow them. It is important to study lobbying controversies beyond bound groups and institutions in order to understand the entanglement of actors and interests. Perhaps the greatest value of the network metaphor as opposed to institutional frameworks of abstract relations is the distribution of interactions in with each element has an effect on the final (or tentative) result. In the case of safeguards on salmon, Chilean officials and diplomats actively engaged in defending the operation of free trade policies, a defence they regarded as a constitutive part of both commodity flows and work obligations. In this case, interest group influences are not only salmon farming companies but also governments, diplomatic bodies, and EC officials as well as all the channels and means that open up negotiations within Brussels (phone calls, diplomatic notes, informal meetings at cafés, etc). We shall think of this network as collective action performing multilevel and multilateral international trade. Lobby is also multi-local as it is practiced at many places and moves in many directions to and from Brussels and between other interested parties. Without question, Brussels provides the main settings, facilitating procedures and expertise in performing such practices. In this sense, Brussels affords a major *lobby hub*.

Brussels, 'the capital of Europe' has become an important place for the performance of international institutions practices. A quarter of its inhabitants are foreigners, most being staff based at one of the many organizations headquartered in Brussels: the European Commission, the EU Council, the European Parliament, the Committee of the Regions, and NATO, amongst others. A walk through the city is very illustrative of the international atmosphere imprinted in its configuration. The sight of many double-flagged buildings (the EU flag of blue and golden stars plus a national state or institutional flag) is a symbolic dimension of this multinational space. But the atmosphere also effuses from the exterior appearance of the people. A majority wears elegant suits that suggest the position of highly ranked clerks. They inhabit the city in a

particular fashion. One can see multilingual groups of smart-looking men and women at café tables and restaurants chatting after work. The ethnographic rule of not assuming people's ascription is swept away because one inevitably guesses as to which EU body, embassy or international institution they are associated. Staff of international institutions are visually distinguishable from tourists and the ordinary inhabitants of Brussels. They perform in the style of cosmopolitan elites. Brussels is a city that concentrates the officials, diplomats, and advocates *making* the European Union.

Diplomats, advocates, and European Commission officials

How could we approach lobbying taking into account the many actors and sites that Brussels connects? Recent literature regarding lobby research in the EU does not delve deeply into exploring practices but remains at the level of the question of corporate interest groups and strategic behaviour within institutionalized relations (Mazey and Richardson 1993; Coen 2007; Dür and De Bièvre 2007a; Dür and De Bièvre 2007b; Mahoney 2007a; Woll 2007b). Although this work covers a wide range of cases to depict 'interest groups influence' at the EU, it is of little help if we want to know how lobbying practices actually occur. A good exception is Robert Hull, a senior EU official who in a detailed ethnographic fashion recounts who the lobbyists in Brussels are, providing a very interesting insider's view as a starting point:

> *Lobbyists have come in many forms to my doorstep in the guise of lawyers, public-relations firms, specialist consultancies, representatives of industrial federations, representatives of companies or individual organizations, representatives of non-governmental organizations, and diplomats from non-Community countries* (Hull 1993: 82)

Despite the wide range of actors, already in 1993 Hull remarks on the increasing professionalization of lobbying. These professional lobbyists became increasingly (self)-labelled as 'advocacy groups'. As Mahoney notices, the terms 'lobbying' and 'lobbyist' is avoided by practitioners in both the US and the EU, due to negative connotations (2007b: 55). Moreover, Baumgartner, together with his claim to the proper use of the term 'advocacy' over 'lobbying', warns us that the further specialization represented by the concept of advocacy should not separate government officials from private advocates, since they are also in effect working as allies of private interest (Baumgartner 2007: 483). According to my fieldwork experience, I would argue that the words lobby, lobbyist and lobbying are used in colloquial speech but replaced by advocacy, advocate and advocating when the interlocutor reverts to a more technical language.

Nonetheless, discussion as to the proper naming of an existent practice and its group of practitioners does not tell us how and when they engage in lobbying activities. For this to happen there needs to be a public issue – a controversy – addressed by someone or something that triggers a normative attempt at stabilization. How does a process of drafting regulations begin at the EC? The limited and restricted number of actors with access to the beginning of a process of regulation or legislation, makes Hull's magnificent ethnographic account particularly relevant:

> *The Commission has to be the primary target of any lobbyist or pressure group. The early thinking of any proposal takes place usually in the office of one Commission official who will have the responsibility for drafting legislation. The individual who is responsible for the initial*

> *preparation process over a given period of time (first draft, consultations with the Commission, consultations with interested parties, subsequent drafts, navigation through the Commission) will find that when the final proposal is adopted by the Council it usually contains 80 per cent of his or her proposal. At the beginning, he or she is a very lonely official with a blank piece of paper, wondering what to put on it. Lobbying at this very early stage therefore offers the greatest opportunity to shape thinking and ultimately to shape policy. The drafter is usually in need of ideas and information and a lobbyist who is recognized as being trustworthy and a provider of good information can have an important impact at this stage* (Hull 1993: 83).

Thus, lobbyists at early stages become a desirable source of information that, if relevant, could imprint their interest on the formulation of policy documents. Hull goes on:

> *There is also a possibility for influencing the EC decision-making process at the cabinet or private office level within the Commission. This, however, is not a straightforward task…[T]he Commissioner will have given a political steer to the directive which her or his cabinet is unlikely to abandon. In extreme cases, however, a group might be able to persuade other cabinet [members] which it suspects share its particular view or which contains member of the same nationality, to block proposals or introduce last minutes changes. This is a real opportunity, since a considerable amount of horse-trading takes place between Commissioners* (Hull 1993: 84).

Evidently, channels for lobbying are multiple and little straightforward. They are dependent on a capacity to discriminate relations of trust and distrust, the ability to divert or capture attention, and on the imaginative use of resources, such as friendship and nationality, and to bypass obstacles for direct, open interaction.

Hull's description of the beginning of the lobbying process provides excellent ground for re-connecting it with our case study. How did Chilean and Norwegian officials and experts carry out the practice of lobbying in Brussels? How did these negotiations connect back and forth with other sites and actors? Scratching upon the visible surface of the safeguard case allows me to turn now to the less visible actions. Next, I will describe how the controversy was perceived and enacted by Chilean officials at their embassy in Brussels; by Norwegian salmon farming representatives in Bergen, Trondheim and Brussels, and; by Patagonian people at Puerto Cisnes and the fish farm sites.

First, I will call to the stage one of the Chilean lobbyists: a Chilean High Diplomatic Officer to the European Union[10]. The meeting was held at the Chilean embassy in Brussels. The building was located in a quiet street on the Montgomery neighbourhood, a prestigious residential area not far away from the Schuman roundabout, around which all of the international institutions are clustered. After a short protocol of reception and waiting, I was finally led to the High's office. The solemnity of the situation was somehow smoothed over by the double facts of sharing nationality (language being the most visible aspect) and academic interest (he taught International Relations at a Chilean University). The Diplomatic Officer played a key role articulating the negotiations during the safeguard process. What follows is my reconstruction of the process from his perspective. I will shift to first person narration to reflect, uninterruptedly, on both the core of the Diplomatic Officer's involvement in the case and my role in leading the interview. Note that I am doing this in order to maintain continuity in a summarized account. Although I use the Diplomatic Officer's style of speech, my intention is not to

erase my own presence, but rather to merge our conversation into a single narrative. The richness of interviews lies precisely in the entanglement of the dialogic process – a kind of distributed agency - that leads to a common outcome. The decision to emphasize this double-sided engagement by merging the dialogue into a monologue is finally, a matter of style. This stylistic choice stresses the creation of a third product, that is to say, it is neither the interview itself nor its transcription, but a new textual representation that reflects what I, in retrospect, consider to be most relevant parts from the original conversation for the construction of my argument. A last but not less important warning: when the Diplomatic Officer referred to "*we*", he included everyone that he was representing in the network at a certain point.

Chilean Free Trade Diplomacy

The safeguard process actually started one year before its official announcement. Colleagues within the Commission alerted us informally about the contentious issue ahead. We do not have a formal monitoring system but regular contacts based on good personal relationships with officials within the EC. I must emphasize that Chile is seen as a reliable counterpart for EU officials. This is not based on abstract assumptions but on close collaboration in the negotiation of the Association Agreement which was signed in 2002. EU officials who worked on that agreement were the first to tell us about the complaints of British producers. These officials knew that a trade accusation could disappoint the expectations and trust built during the negotiation of the Agreement. For me, the case added another chapter to the salmon records in a continuous process that started long before, with an anti-dumping accusation in 2002, which was refuted, and later the salmon shipment stopped in Rotterdam with traces of malachite green[11]. Although we had experience managing similar situations with agro-food products, we had to start from scratch. Within every sector, each product relates to different EU actors inside and outside the Commission. This specificity of trade issues also applies to seafood products, which governance systems are spread in several institutions. In addition, contacts with the External Trade Commission began from zero since the Commissioner was only recently in charge and his cabinet included new personnel. We alerted Santiago (Chilean Government) and began diplomatic lobbying at various levels. At the medium-level, our technical team contacted the trade commission staff and I dealt with the highest level political contacts. We sent diplomatic notes to confirm the backbone of the accusation and started to prepare our strategy in coordination with experts on international commercial law from the Economic Office of Foreign Affairs and the Salmon Producers Association, both in Santiago.

From the very beginning, we were clearly told by EC people that the measure was not aimed at Chile, but Norway. Norwegian salmon exporters did not comply with an informal agreement to self-restrict salmon imports to the EU (in trade jargon Norwegians breached an undertaking), and thereby unleashed political irritation within the EC. Indeed, this was very confidential information but has proven to have been most reliable. As you know, before the sanctioning of definitive measures the EC took provisional measures against Norway. Chilean salmon was excluded through a very intricate argument. There is a rule that makes an exception for any commercial barrier to developing countries whose participation amounts to less than 3% in a given market. Chile in 2004 had a slightly higher share in the EU salmon market. However, the EC experts took 2001 as the reference year, a year Chilean salmon imports declined due to

the restrictions provoked by the malachite green crisis. I cannot prove this, but I think this calculation was purposeful, so as a result we were excluded from provisional measures. In any case, it was a very tense moment for all of us because we knew it would be a short and partial triumph. The message from the EC was clear: *if the Norwegians do not react to this pressure, then measures will be tightened and, in this case, you Chileans will be affected.* At this moment, we started to make contact with Norwegians at both diplomatic and business levels. However, we maintained our autonomy knowing that our interests might diverge at some point. Commercial alliances in this matter are ephemeral. Moreover, another reason to make contact was cross-interests; Norwegians are not only competitors but also commercial partners with salmon farming businesses in Chile (see Chapter Six).

When definitive measures were taken we intensified the diplomatic lobby. We sent informative notes to activate all our embassies in the EU. There was a tacit division of diplomatic labour: Norwegians lobbied the Danish and French, and we did the Spanish. The idea was to get their support as EU members capable of bringing the issue up to EU Council and blocking the measure at this level, something they finally did. To be clear in this regard, we cannot put this achievement down to diplomatic lobbying alone. Member states wanted to avoid negative consequences for their local processing industry. Political problems began for the Trade Commissioner and his team at this point. He was British and recently charged with the post, which probably compelled him to take up the complaint of his government in order to protect their producers. We are talking about a minority of British farmed salmon producers who during times of parliamentary elections managed to make their inefficiency an issue for international trade. The Irish were opportunistically enrolled. The Trade Commission's technical team – comprised of 4 to 5 people - was in the process of formation and I think they miscalculated the political risk of a weak proposal.

On our side, we had a very active salmon business representative and a group of professionals with whom I was in daily contact. When needed, they flew quickly between Brussels, Santiago and Geneva. Lawyers did not play an important role at this time, but diplomacy did. Of course, advocate bureaus based in Brussels were knocking at the embassy's door to offer their lobbying services. But, we were confident that good results would come from our diplomatic negotiations, which is what finally happened. The Trade Commission notified us that safeguards were removed. In retrospect, I do think that there was a technical criterion to adopt the measure initially, but the resolution was political. The truth is that we were the greatest beneficiaries of the safeguard chapter. To come to this positive end, *there were a great number of factors, in which we played only a small part, we were just one gear in a more complex ensemble.* This is something that Chileans find difficult to understand. We are too *chileno-céntricos* – Chilean-centric – in thinking that the job was done exclusively by our institutional means to lobby. We tend to overestimate our capacities, forgetting the complexities involved. It is true that we are alert to potentially conflictive situations and certain informal *dispositives* function to gather relevant information. We (diplomatic missions) are somehow a projection of the development model we have as country, of the weight of external trade and exports for our national economy. Do not take it for granted, other states do not have this same *apparatus* or even *the will* to react and engage in such a complex trade case. In a gradient going from low to high levels of governmental intervention over private trade controversies, Chile would be at the extreme end of active engagement in favour of free

trade. As a counter example, I would take the Japanese, whose government normally has a policy of no intervention over private sector trade disputes.

This interesting remark leads us straight into the heart of the next point: How did Norwegian representatives approach the safeguard case?

Norwegians and protectionism, or the burden of not being EU-ropeans

In September 2005, I contacted the main Norwegian lobbyist to the safeguard case from the FHL-*Havbruk* (the Norwegian Salmon Farmers Association). At that time, I was hosted by the Centre for Rural Research at Trondheim where the main FHL headquarters were located. However, the FHL team for external trade had an office in Bergen. After several telephone conversations, we made an appointment to meet in Bergen. Unfortunately, on the same day I flew to Bergen, he was suddenly called to Brussels, so, instead, I interviewed his assistant, a man in his thirties with a background in public administration. Following, I will present the core of our dialogue, again in first person narrative style.

In September 2004, we initiated talks with the UK counterpart and the British EU Commissioner in order to reach an agreement on *undertakings* – voluntary accords to reduce volume or prices – and henceforth to avoid any definitive measure on either anti-dumping or safeguards. These talks went really well, but suddenly, the EU Commissioner stopped the meetings and instead pursued the investigation towards safeguards, which ended with the fixing of an unacceptably high minimum price and volume quotas.

The EC imposed the safeguards but during the process did not convincingly sway members' states vis à vis its utility. After all, processing industries within the EU are very dependent on salmon imports. A difference between our [Norwegian] and Chilean exports to the EU is that our main product is fresh salmon that is exported as raw material to food processing industries in Denmark, Poland, Germany and France: EU salmon imports from Chile are mainly frozen. Trade duties may alter prices but processors were reluctant to change certain market preferences from one day to the next. They obtained different products through reprocessing fresh or frozen salmon, and safeguards were risking the current balance and a normal provision of both. We coordinated strong support from our EU importers and processors. Also some trade unions and consumer organizations were actively backing up our position in Brussels. Thus, such interested member-states started to rally against the safeguards. The EC turned forcefully and fiercely towards the anti-dumping investigation against the Norwegian industry partly due to this political backlash. What was the difference for us? To block dumping measures you need to convince thirteen out of twenty-five countries whereas for safeguards you only need a minimum opposition from member-states. In the safeguard case, the EU commission failed to keep its position and was challenged by a number of countries who opposed the measure. The story then continued as an anti-dumping case and the governments met this challenge at the Anti-dumping Committee of the Council of Ministers. If a majority of the Anti-dumping Committee would not have agreed, then the measure would have been stopped (of course, Norway has no representation at the Council). We failed to convince thirteen member-states and,

therefore, the anti-dumping measures went ahead. This fall (2005) we will re-negotiate and I hope to find a final solution.

We publicly rejected the anti-dumping duty and condemned the manipulation of data by the EC. They [EC] had started the dumping case based on *a form* asking for cooperation in a trade investigation. This form was in English and distributed among producers with the help of our organization. The Norwegian salmon farming industry is quite dispersed and diversified; some are very small-scale producers made up of men and women working at the farm on a daily basis rather than clerks or bureaucrats. It could be that they did not understand English, or happened to write the wrong answer on the form or maybe the fax machine was off. The fact is that there was a very poor response. Norway has a much more diversified salmon business configuration than Chile, so is very difficult to centralize information. Then, the EU said: *"Norwegian producers did not co-operate"*. As a result, some were hit with a duty of 24.5 %. The sanctions included many of the best-run companies that were making a good profit but, according to the EU, 'they were dumping and not cooperating'. It was a very tricky procedure; the Norwegian industry was divided into two groups according to their (lack of) response. Indeed some producers sued the EU, because they argued that procedure was not undertaken in a competent manner (see Box 1). In external trade there are mechanisms where, if fairly negotiated between producers and the EC Commission, you can reach undertakings and set up provisional and self-imposed restrictions. However, the EC always claimed insufficient data to rapidly imposed trade sanctions.

As to our relationship with the Chileans during the development of the safeguard case, I would say that more than cooperating, the Norwegian and Chilean producers were actually updating each other with information and statistics. We did not really hold inter-organizational talks. The safeguard case was, to a large extent, an issue managed by the Chilean and Norwegian governments. We need to separate the issue of safeguards from the anti-dumping accusation, according to the responsibilities implied. Safeguards are a major restriction to free trade, so counter-actions were mainly articulated by the Norwegian government, whereas dumping accusation is targeted against producers. During the handling of the safeguards negotiation, both governments used the opportunity to meet, and even producers associations signed an agreement. Of course, there are commonalities: we both want free trade and we share the same market, so many arguments were similar. But contacts were superficial and based on discursive statements of mutual aid and the exchange of statistics. Of course, Chileans were not very interested once the case turned into a dumping accusation directed at the Norwegians. But beware, Scottish producers were sending a message to any non-EU producer seeking to increase their share in the EU salmon market. The Scottish are becoming less and less efficient, with a heavy cost structure. Only 20% of the Scottish salmon is Scottish owned, the rest being owned by Norwegians. So, the Scots must have very good lobbyists in order to have become so over-represented in the EU market.

Later, I had the opportunity to talk about the safeguard case to other people involved in salmon farming activities in Norway: academics, entrepreneurs, salmon farmers, and aquaculture authorities. They diverged in approaching the issue from different angles, but a coincidental view can be summarized as it was bluntly stated by a senior high official of the National Fisheries Officcie - Fiskeri Directorat:

This is the cost of not joining the EU. Every now and then, EU officials punish Norwegian commercial activities through market regulatory measures. They have the image of the selfish giant, the oil-rich state that is unwilling to share its national revenue with the other twenty-five states. The fact that (other) bureaucrats do not spell it out that clearly is because they use a diplomatic language typical of negotiators, but I assure you that many Norwegians think as I do.

For some Norwegian experts, the safeguards and anti-dumping measures constituted an externality, a political punishment for not belonging to the EU. They referred to it as an example of the price for autonomy. Interesting, though, is that the political cost is paid by small salmon farmers and not large companies whose interests in the salmon farming industry are distributed worldwide. This is shown by how at certain points in the negotiations Norwegian representatives were concerned about securing that trade sanctions would at least not affect all of their interests. After all, they have important business shares in Chile and in Scotland. Thus, far from nationalistic sentiment, the ramifications of commercial interests and the entanglement of politics and business have exposed a more complex face.

Box 1. To illustrate this point I have chosen to insert a paragraph selected from an official EU report that gives testimony as to the development of certain anti-dumping cases that went to court. It takes a case in 2002, prior to the safeguards, where a Norwegian company appeals against the EC sanctions:

9.4.2. Farmed Atlantic salmon originating in Norway

– Case T-340/1999- Arne Mathisen AS v. Council : Judgment of 4 July 2002

In this case, the applicant contested the withdrawal by the Commission of an undertaking and the imposition of duties on the imports of salmon from Norway. Essentially, the Commission had withdrawn the undertaking further to a failure by the applicant to fully provide data in a way as to allow the Commission to verify the implementation of the undertaking. The CFI considered that the requirement to respect the minimum import price as settled in the undertaking had been breached. Mere failure to provide information permitting verification of pertinent data is to be regarded as a breach. Moreover, the CFI found that the principle of proportionality does not apply when considering the question of the imposition of the duties after a breach of an undertaking. Finally, the Court considered that the breach of undertaking by the applicant broke the relationship of trust on which the acceptance of undertakings by the Commission was based and justified the imposition of definitive duties (European Commission 2003: 49).

Back to Chile, back to Puerto Cisnes, and back to the fish farms

Only three days after the EC safeguards announcement, representatives from Chilean companies translated the trade measures into an economic threat for regional and local interests: the EU decision put the USD 250 million investment projected for Aysén Region, at risk[12]. The argument was presented using the following rationale: companies' plans for the region were based on increasing the production of frozen salmon destined to European markets. At this point it is worthwhile to remember that just 15% of farmed salmon is produced in Aysén and salmon exports to Europe amounted to less than 5% of total salmon exports. Although fresh salmon production was feasible in Aysén, the strategic shift to frozen salmon was done with the intention of overcoming logistical and cost issues: the isolation of the fish farm sites in Patagonia; the lack of processing facilities for fresh products, and the high cost of energy and transport. It follows that, according to Salmon farming spokespersons, safeguards put these projections at risk and therefore temporarily restrained business plans.

The international crafting of the safeguards case was then transformed into a national and regional issue through the joint action of Chilean salmon entrepreneurs, higher state officials and the press. But, did this have any impact on salmon farming localities? How did this controversy manifest itself at the fish farm or in local communities back in Patagonia? How was the controversy presented to locals? Were locals represented in some way in the lobby networks? Was this controversy of any interest to them? Methodologically, these questions are difficult answer. The problem lies in finding out how certain discursive practices aiming to amplify a controversy are effectively translated or connected with other practices in distant settings. Most of the time, we follow how networks stretch out over time, distance, and number of actors, but not everything is about connection. Networks are also dissociated, purposively cut, or overshadowed by actors prioritizing closer matters. Next, I will present some of the traces of this controversy as they were imprinted or enacted in Puerto Cisnes.

From the perspective of information flows, a first important observation is that national newspapers are brought to Puerto Cisnes with a one-week delay and are only available at the Municipal library. Hence, major press, which was an important medium for the diffusion and amplification of this case, did not have much of an impact on people's lives. Nonetheless, small regional newspapers of higher local relevance and readership than national ones, took the case on board so we cannot assume local ignorance on the issue, only some delay. Regarding the internet, Puerto Cisnes has two access points: one paid (generally empty, see Chapter Four) and the other free of charge at the library, a post hijacked by school children. Thus, it is unlikely that on-line news would be a significant source of information about the safeguards.

From the perspective of local interest, as explained in detail in Chapter Four, for *Cisnenses* the *ascription to locality* is well embedded in their shared history as settlers. This historical feeling is not an abstract cultural essence, but originates in the material remnants of its precarious foundation as a town; the collective experience of creating a settlement. History is enacted in many ongoing practices such as social festivities honouring the – now heroic – endeavours of the 'pioneers', the presence of early settlers and the importance of kinship in recognizing who is who. History is also physically present in a myriad of ways, like in the architecture of houses, the two deserted seafood factory buildings, the ruins of the first Catholic boarding school and orphanage – *Hogar*

San Luis de Don Guanella, the stylized wall drawings of two local historical leaders – Major Eugenia Pirzio-Biroli and Priest Antonio Ronchi, and the wooden skeletons of old boats on the beach. Let me state clearly that this self-organizing process of settlement was never fully autonomous from the state or the church nor did it exist as a single project. Indeed, there are many histories of how the town was created (see Chapter Four). As a result of this process of creating a shared – now historical - materiality, the people of Puerto Cisnes know who belongs and who does not. They do not hesitate to attribute (or refrain from attributing) an ascription of locality to a person. The creation of this difference is embedded in a profound dismissal of impositions regarded as external for a number of practical reasons: first, *Cisnenses* reject being attached to specific activities or institutions with superior economic or moral authority[13]. Authority is something *they grant*, it comes from below and is consented among them. There is a tendency to distrust any form of hegemonic claim coming from outsiders – *afuerinos*. People from Puerto Cisnes do not grant unconditional authority to salmon farmers solely based on economic standing nor do they relate to their practices as primary source of belonging or identification. They never present themselves as *salmoneros* (salmon farmers): *Look, Puerto Cisnes is a town where we farm salmon*! Nor do they do so with fisheries. They have witnessed the rise and fall of many economic activities over time (see Chapter Four). Hence, for the most seasoned folks in town salmon farming is regarded as possibly just another boom. In this sense, history is present in many ongoing actions of *cisnenses* and somehow reaffirmed and enhanced through the town's geographical isolation. Stating this (relative) isolation has proven to be important for certain processes of identity formation and of course also to expose differences. The conflation of history and relative isolation has nourished a strong conviction among *cisnenses* that the practice of autonomy relates to maintaining enough room for manoeuvre to respond to changes endogenously or, when necessary, their resilience capacity.

Within the fish farms scattered across the fjords, the safeguard issue was received differently. Chiefs of staff did follow the case through the internet but did so out of a concern for being well-informed rather than through feeling threatened. Nothing really changed at this level, workers kept doing their jobs and fish kept fattening up (unaware that safeguards made their value climb). Only at the managerial level was the safeguard threat translated into visible changes; setting up new company projections provoked an increased workload. Managers spelt out their frustration and complained of the extra time spent at work. Taking measures to enhance the future in creating this new scenario was hard work. Top managers were enacting the threat through reducing investment plans, re-projecting ciphers, displaying graphs, revising contracts with customers, etc. For managers, the protectionism manifested in safeguards was interfering with their well-developed foresight techniques (Law 2002). Everything they thought was necessary to redirect the course of actions was performed. Enrolling actors, displaying images and mobilizing resources to counteract measures demanded managers' imagination, time, and not the least, a lot of money.

The labouring of Networks

The case presented thus far, is a good example to illustrate the concept of network that was posited at the beginning of this section. Simply stated, it draws on the Latourian

image of "work-net", a reversal created through a play of words which underlines the need to overcome features misrepresented in the concept of network (Latour 2005: 123). The above description of a trade controversy is an empirical invitation to think about the work of netting, the active labour needed to form and perform a web of relationships. This image stands against those conceptualizations of networking as an enduring form or pool of interpersonal social relations that are made instantly available and can be counted on whenever they are required (Granovetter 1973; Long 2001: 143)[14]. Networks in this view do not refer to actors' resources or to well-established social relations. If networks last it is because they are made durable through the active engagement of actors. Work-netting is the vigorous and perceptible work of all actors that in a given situation, a controversy, event, or string of circumstances (Strathern 1996: 521) mobilize their resources to make a web of relations come into existence. Networks, in this view, are ephemeral effects of heterogeneous actors and not an enduring outcome. Reflecting on the safeguard case, I have selected five pairs of concepts that could help me to elucidate this formulation of networks, or more precisely, the lobbying of networks. They are: 1) asymmetries and differences; 2) time and place; 3) strategies and tactics; 4) mediums and resonances; and 5) power and persuasion. They are dissected only for analytical purposes in order to highlight particular empirical features of the lobbying case. However, they are integrative and non-hierarchical parts of the network deployed, as will be shown in an example at the end of this section.

On asymmetries and differences

The safeguard case confronts us with a situation of multiple events that placed Brussels as a nodal point from which the network *radiated* or towards which it *converged*. The centrality of Brussels is contingent though, since the controversy neither occurred nor began in a pre-given set of centre-periphery institutional arrangements. It is precisely the principle of symmetry in the network metaphor – a landmark of Actor-Network Theory – which transformed it into an apt image for describing the way that disparate entities can be linked or enumerated without making assumptions about level or hierarchy (Strathern 1996: 522). Despite the principle of symmetry, the controversy over the trade of salmon has been woven around and contested by the construction of *asymmetries* and *differences*. The case is rife with examples: asymmetries in information and commodity prices, asymmetries of access to regulatory bodies, differences between categories of producers and salmon, differences over strategies and means for lobbying, differences regarding claims over international reputation, and evidently, asymmetries and differences on the final imposition of sanctions.

Both concepts are relational and interdependent. The principle of symmetry implies that elements should not be treated differently. Conversely, asymmetries between two or more elements are exposed through their differences. In other words, asymmetries are relational insofar as differences among actors are rendered visible. This is hardly something new. We have been told that the principle of symmetry in treating actors within a network should not overlook the way actors attribute centrality, size or differences to certain actions, events or places (Law 1994: 11; Munro 1997). It is through the labouring of differences that actors become self-aware of their own possibilities and from this awareness can reposition their strategies. It is exactly through processes of differentiation that actors turn asymmetries into means of power (Foucault

1982 [2002]: 344) Usually, the stabilization of a controversy is a momentary lapse made by the consent (or coercion) of actors around a performed solution (or imposition). To come up with solutions among disputing parties, actors need to transform the potential of an imagined solution by drawing from their knowledge repertoires and acting upon them accordingly. The possibility for this to happen may increase with the existence of differences rather than through the homogenization of imagination. These knowledge interfaces are not abstract assumptions of actors' cognitive games, but are embodied and situated, (Arce and Long 1992) something that needs not only to be stated, but empirically specified. Consequently, an important project of this research has been to show how and when *places* conveying the settings for making these differences have changed their relational position of influence over *time*. In other words, place and time give a changing spatial-temporal dimension to the relational positions of actors during the process of differentiating a controversy before its stabilization.

On time and place

Actors work hard to render differences visible and to put asymmetries in the proper place and time. The active coordination of these differences does not occur in a void. They are facilitated by the existence of settings that are crucial for the enactment of differences, physical spaces that afford the materialization of both network articulations and network dissociations. However, place and time are meaningless if not confronted with situations through which we can express and organize our experience. Therefore, the perception of time and place will differ according to each situation and consequently, trigger responses to adjust our activity to the changing circumstances. A 45 minutes meeting with the diplomatic officer in his bureau requires inquiring beforehand as to his time availability, watching the clock during the interview to feign concern for his time, and being aware of conventional body signals (e.g. restlessness, looking at one's watch, clearing the throat) that suggest the meeting should soon finish. A informal café meeting between the diplomat and his EC official informant/friend might not depend on 'clock-time' or the time it takes the waitress to serve the drinks, but might perfectly be measured in coffee-time, that is the one or two cups needed to move from familiar greetings to the discussion of an important trade matter. These adjustments to our way of seeing, speaking, and moving in changing situations are done pre-reflectively in our daily activities but can purport decisive clues when carefully observed during research[15]. In this chapter I thus sketch two different but complementary ways of understanding time and place. One is sequential, where time-activity (Schatzki 2006) can be followed as a trajectory of situated events and the other is the coordination of a continuum where certain events are given more importance according to the actor's position in that continuum.

The first sequential mode can be summarized in the following trajectory as it was presented in the public chronology of the situation: a) the making of an issue in parliamentary election times in Britain; b) involvement of EU officials and the technical construction of measures in Brussels; c) progressive and cautious engagement of Chilean, Norwegian and Faeroes counterparts in Brussels; d) the tactical mapping of each party's position in Brussels; e) the official announcement of the measures and strident counter-actions; f) strategic planning back in Santiago, Oslo and Bergen; g) the generation of alliances and the enrolment of third parties; e) alternation between

approaching and taking distance from allies, as the case develops; and f) the differential imposition of definitive measures.

The second mode pivots around the coordination of social action. Time is important beyond the sequential progression of events but as *timing*, the practice of the timely coordination of relations. Here it is very important to specify where these relations are perceived and enacted. Thus, saying that actions are situated is equivalent to *placing* them within a particular arrangement of elements. By means of placing and timing we can treat interactions as *in-motion* articulations among actors rather than as static connections between networks points. To depict the changing trajectories of coordination beyond sequential events and micro-interactionism we can recur to morphological images. But again, the use of morphological metaphors to apprehend networks visually is worthless if it does not provide empirical information about the changing spatial-temporal dimension. In the case of lobbying, in order to conflate time and place without losing sight of other points in the network we could resort to a view of *radial asymmetry*. Interactions are radiating from or converging to a common centre, but while events unfold the length of the rays or the quality of being centrally placed will also change depending on the observer. Lobbying to and from Brussels does not diminish the importance of its (ar)rays: the (ar)rays being the actors actively labouring for the network in Santiago, Oslo, Bergen, Geneva, Trondheim, London, Puerto Montt and Puerto Cisnes. The network assembled is an effect of all actors involved in the different settings, but if we specify the time of actions, not as chronological succession of events - as in the first public account of the case - but as the *timing* perceived by concrete actors, we can create a changing image of the translation of power. As shown trough the narratives of the Diplomatic Officer and the Norwegian lobbyist, these are the ways certain actors-in-places are made more relevant than others during the process of composing an international trade controversy.

The visual metaphor of radial asymmetry highlights the connected-cum-relational position of centre and margins – the placing -, but also stresses the subversive power of its rays insofar as they can grow in importance through the development – timing – of a controversy and become a new temporary centre. Thus, the centre of power moves as a consequence of certain actions performed in the struggle of netting and dismantling a controversy. By adding the image of radial asymmetry I do not intend to foster yet another network typology, but to provide a disposable metaphoric device to trigger the imagination to localize action and conceptualise the unfolding of interactions over time. Place and time also provide the foundation for thinking about the next pair of features related to the labouring of networks: strategies and tactics.

On strategies and tactics

I will draw on the concepts of strategies and tactics, as they were brilliantly presented by Michel de Certeau in his book "The Practice of Everyday Life" (1984). De Certeau referred to strategy as:

> *[t]he calculation (or manipulation) of power relationships that becomes possible as soon as a subject with will and power (a business, an army, a city, a scientific institution) can be isolated. It postulates* ***a place*** *that can be delimited as it own and serves as the base from which relations with an exteriority composed of targets or threats (customers or competitors, enemies,*

> *the country surrounding the city, objectives and objects of research, etc.) can be managed* (in bold his emphasis, de Certeau 1984: 36).

Thus, a strategy lies in the definition of a proper place from where 'the other' or the environment is defined. Contrarily, de Certeau defines tactic:

> *[a]s calculated action determined by the absence of a proper locus. No delimitation of an exteriority, then provides it with the condition necessary for autonomy. The space of a tactic is the space of the other. Thus it must play on and with a terrain imposed on it and organized by the law of a foreign power… It does not, therefore, have the options of planning general strategy and viewing the adversary as a whole within a district, visible and objectifiable space. It operates in isolated actions, blow by blow. It takes advantage of "opportunities" and depends on them, being without any base where it could stockpile its winnings, build up its own position, and plan raids* (de Certeau 1984: 37).

This characteristic of tactics makes them dependent on a sense of opportunity related to time instead of place. The fast movements to seize others' actions. Strategies are accorded to keep certain relations that are based on property regimes in place; a place from where power is exerted to fortify such a strategic position. In short, strategy, as de Certeau puts it, is *the triumph of place over time* whereas tactics, in the absence of a proper locus of power, has the capacity to subvert the dominance of place seizing the opportunities of time.

The knitting of strategies is found throughout the safeguard case: in the organization of British salmon farmers to define and target as threats the non-EU producers, in the construction of technical sanctions within the Trade EC cabinet, the joint action of Chilean official and business representatives, and so on. Regarding the latter, it is interesting how the notion of strategy as developed by de Certeau demonstrates that the Chilean government and Chilean salmon farmers were acting as one body. They faced and tackled the trade barrier strategically insofar as the place threatened was, according to them, the nation's interest itself or at least the idea of a 'Chilean economic model'.

Tactics were also evident throughout the case, but paradoxically their descriptions were less visible to the ethnographic gaze. How is that possible? I consider this to be a particularity of lobbying activities. Tactical movements occur in settings that escape public scrutiny, which does not necessary imply that they do not happen in public places, but rather that they are sometimes simply inaccessible for research. For instance, many tactical movements might have occurred at cafés or restaurants, over dinner, walking along the boulevards of Brussels or via informal telephone or email exchanges. But tactics were also deployed by other interest groups – or rather affinity groups – that went beyond the common interests of business and politics and which do not manifest the same type of concern at a 'national issue' as salmon farmers. For example, the opportunity opened up by the safeguard case was taken up by environmentalists, labour unions, and artisanal fishery representatives to raise different concerns as to the performance of the salmon industry. These groups equated the accusation of safeguards with dumping activities and used the temporary spotlight to redirect attention to new matters of concern. The period over which the controversy lasted represented a chance for those groups to publicly condemn certain salmon farming practices. The EU accusation created an opportunity for less visible actors to proclaim a moral victory over this influential industry.

Strategies and tactics bring our attention to the issue of intentionality. For some authors, power strategies of lobbying are fully embedded in intentional action (Korpi quoted by Woll 2007a: 60). On the other hand, a Foucauldian interpretation of the case would find lobbying practices to be a prime example of non-subjective intentionality, which is equivalent to admit that intentions occur through agents but are beyond the capacity of individual control. Both theoretical stances towards intentionality bring the problem of agency back to the forefront and would split analysts into two camps: those who only accept individual agents as capable of intentions, and those who see forms of intentionality that go above and beyond individuals. Looking for an alternative way to understand the intentionality of strategic or tactical action I will recur to Hans Joas who convincingly argued in favour of the encompassing dimension of creativity in social action. First, Joas argued that a theory of social action does not need to recur to residual categories (intentional/non-intentional) in order to explain what cannot be fully contained by a single conception and, second, that within this conception of creative action, intentionality is distributed across our bodily capacities to act in a given *situation* (Joas 1996: 158). Intentions are not the planning and use of means towards a goal, but they depend on our immediate awareness about the situation we are facing. In Joas' words: *Only when we recognize that certain means are available to us do we discover goals which had not occurred to us before* (Joas 1996: 154).

I argue that a conception of strategies and tactics informed by the situational and corporeal disposition for action provides us with a way forward in the issue of intentionality. Moreover, if we think of strategies and tactics as not only exercised by two different groups – the powerful and the weak, as they were originally presented by de Certeau – but as combined and adjusted to a given situation by the same actor or group of actors, we will obtain a non-essentialist but pragmatist understanding of the concepts. While acknowledging that most strategic actions are intentionally devised – in this case to influence outcomes of political decisions – the empirical evidence shows that they are hardly controllable in all facets given the complex entanglement of interests. Thus, tactics provide creative ways to go through the interstices of institutional constraints and to bypass and take advantages of time openings in each situation. The latter does not necessary mean acting always outside of/beyond the procedural or normative track of institutional frames but using those procedures and norms according to the changing movements of adversaries. As shown in the narrative, in lobbying practices there was little room to calculate tactical action in advance, therefore we can affirm that no strategic-intentional action can fully control tactical ones.

Tightly related to strategies and tactics are the means to project symbols and actions – or symbolic actions – and the capacity to echo or divert someone else's interest. Let us now turn our attention to mediums and resonances in lobbying networks.

On mediums and resonances

In the case at stake, the *visibility* and *audibility* of events depended on the corresponding techniques and means of augmentation and amplification. This is valid if we assume the existence of intentional actors trying to convey a message beyond a first situated appearance. What was the message? The message was the translation of a sector-wide trade controversy into a national issue of concern. However, this assertion over purposive deployment of techniques and means of manipulation is only partial. The

means to control 'public opinion' need not only have a *medium* where signs can be seen and transported, but also a form against which they can *resonate*. In social life both mediums and resonances depend on the disposition and location of people echoing a given sign. Thus, people are not mere dopes manipulated by the fabrication of external meaning for controlling purposes. For many people the salmon trade controversy was irrelevant, marginal, and inexistent, or defined as something external to their lives. The issue of a proper medium to translate a message or a symbol and the right disposition for resonances are vital for both the materialization and interpretation of signs. The symbolic content of a message or event would be significant insofar as it gets meaning when entering into actors' life-worlds. Symbols are often transformed during the process of translation into individual or collective experience and, as Turner has rightly pointed out, they are subject to multi-vocality, complexity of association, ambiguity, and open-endedness (Turner 1975: 155). In the safeguard case, signs were deliberate constructs for communicative purposes. However, the chance to control its meaning and provoke engagement in certain places was rather low. Quite to the contrary it created space for actions of re-signification, which is interesting in terms of the possibilities for social change but counterproductive if we think of a single master intentionality. For the interest of its original bearers – salmon farmers – the strategic amplification of the safeguard case may well be creating a public issue to gain political support. Nonetheless, if we analyze how this happened (through media reports), and who answered the call for support (government officials), we can conclude that it had limited effect on 'public (local) opinion'.

For instance, a press analysis done by the Salmon Farmers Association revealed that during 2004 when the process began to be publicly known, 18% of aquaculture-related news published centred on the safeguard issue, and this increased to almost one third of all news in 2005. However, as I pointed out earlier, the chosen medium did not resonate at the local level of fish farming communities partly due to the lack of visibility and availability of the press but also due to the reluctance of echoing interests regarded as alien. In this sense, the amplification of the safeguard case through the chosen medium in practice entailed the selective engagement of government officials, politicians and entrepreneurial and corporate bodies. All of which somehow raised the question of the real need to create visible public issues, but only to the point of strategic commitment from interested parties.

In the safeguard case we find a fine example of what Marshall Sahlins has called "structural-cum-symbolic amplification of minor differences" (Sahlins 2005: 6). In his article, he focuses on how certain micro-histories are transformed into macro-histories and vice versa. The process relies on the intensification of oppositions through which small-scale, interpersonal or factional disputes are turned into large-scale struggles between nations or their totalized like (ibid 2005: 5). He argues that this process could go both ways (although he does not use cases from macro to micro) due to what he calls structural magnification, that is the combination of universalistic ideas – such as free trade – and particularistic interest – enhancement of profits of a group of salmon farming entrepreneurs. Something that resembles our case, since I sufficiently described the process of amplification of effects in order to make them widely visible. Still, certain elements of the public face of the story (equivalent to Sahlins macro-history) were concealed to make the story more effective. For instance, the open support for salmon farming voiced by the government was transformed into the secrecy of lobbying

practices that relied on the discreet use of privileged information. In this case, a macro-history is atomized into micro-histories through the concealment of its procedures.

The manipulative use of mediums towards the aim of influencing someone else's actions is one way to exert power that is generally associated with the power*ful*. But also we will find that many situations are tactically subverted through changes in the resonance capacity of people. That is the disposition of the so-called power*less* to gain control by choosing either not to echo the message or by redirecting it in a completely different way. Power and persuasion are the next pair of concepts to review.

On power and persuasion

Power and influence are, by and large, the key concepts spinning around lobbying practices. It is argued that we should think of power in lobbying situations as the capacity to influence other peoples' decision and actions over contested political matters (Dür and De Bièvre 2007b). Thus lobbying bluntly defined is practicing the power to influence. I posit that the prevailing form that power takes in lobbying situations is persuasion. Lobbying during the salmon trade controversy implied actors' performance through symbolic resources to persuade others. But, we should not think of persuasion only as a polite game of rhetoric. Persuasion might depend on more than rhetorical ability to include the visible mobilization of symbols. At certain points in the process, this might happen as a harmonious exchange of information, trade-offs or money (Woll 2007a: 61). But it could also include threats and political or business extortions, some of which are institutionalized in official procedures. Thus, power in lobbying practices mainly takes the form of persuasive strategies, some of which entail coercive means to influence. For instance, to compel the Chilean government to enter into the dispute, salmon representatives threatened to restrain investment. Another example might be when, at the suggestion of Norwegian representatives, all trucks carrying salmon to European markets stopped for several hours on the highway as a sign of protest. Or later, in order to enrol the Danish and Polish government, the CEO of the Norwegian seafood giant Pan Fish announced the likely repatriation (to Norway) of work posts in the salmon processing industry that were located in EU countries, arguing that safeguards made it convenient to once again do part of the processing in Norway. Power in these cases is exerted as a strategic threat not towards the bearer of the trade sanction (Trade EU Commission) but as a way to drag new actors into the process whose presence can alter the balance of power (to persuade). In sum, by stating that power in the field of lobbying practices operates mainly as persuasion should not be taken as a single form of action, but as a style of acting which rationalizes the use of symbolic violence or coercion. Persuasion, in this case, is a continuum that goes from coercive forms of domination to those of power as exchange. By suggesting that persuasion might be the most common form that power takes in lobbying practices does not imply a generalization or attempt to apply an overarching theory of power. In fact, the example about the operation of power in the safeguard case should lead us to think of power not just as situated and relational but as changing according to practices and the means of specific activities. The need to analyze the operation of power within fields of practices (Foucault 1982 [2002]: 329) might be the most welcome of Foucault's contributions to the social sciences.

Another angle for thinking about power in lobbying situations relates to membership ascriptions. Successful engagement in a practice such as lobbying signals to others the competence needed to act and to be present in a lobbying situation either through giving the accepted performance or through the correct deployment of symbols. In other words, as Barnes puts it, practical engagement is not a performing membership, but is a membership with the power to perform. That is, the recognition of competent members. Thus, power largely depends not only in members *doing* things but also on members being *enabled to do* a range of things, which is something relational and collective (Barnes 2001: 20). This conceptualization reinforces a view on power as the practice of persuasion in order to engage competently in activities or processes of decision-making. At this point, we should notice that language is a very important aspect of becoming accepted as a competent member, irrespective of whether it is technical language (dumping, duties, undertakings, serious injury, causation, MIPs, etc.) or diplomatic (notes, protocols, hierarchies). Whether certain collective actions are more or less accepted as influences will depend on the values at stake during the exertion of power and, importantly in the degree of coercive means used to persuade others.

There is also power in the capacity to cut the network off, to dissociate the network in a given situation, or to restrict access to others. Networks to lobbying might be a good empirical example of this type of power-actions. Marilyn Strathern argued that *ownership* is a powerful Euro-American mechanism for cutting networks. She explains that ownership entails simultaneously belonging and property, which have correspondingly the power to divide and to disown (Strathern 1996: 531). After Chilean negotiators successfully defended Chilean salmon farming interests – lifting the trade sanctions – they cut the lobby network off in relation to support for Norwegian interests. However, they did it elegantly, in the symbolic signature of an agreement for future cooperation. As stated by the Norwegian expert: everything stopped at this point. Chileans salmon farmers secured their objectives of removing the trade safeguards limiting *their product* flow and immediately withdrew, marking a divide with Norwegian colleagues. They cut the network. A network can also be stopped, when it becomes invisible or institutionalized through the daily routine of its administrators (Latour 2007: 7). Once the safeguard controversy was over, the lobbyists and the institutions that afford the efficient performance of lobbying practices do not disappear, they just prepare themselves to assemble a new network when the opportunity arises. Stopping a network is a final expression of relationships of power; it is power that remains alive in the minutiae of activities of the lobbying practitioners.

Reassembling the jigsaw puzzle

Let us go back to the sequential description of the case as listed above (see the sub-section on time and place) in order to ground this theoretical section. By taking only two moments of the case trajectory, namely 1) the making of a public issue in parliamentary election times in Britain, and; 2) the involvement of EU officials and the technical construction of measures in Brussels, I will attempt to demonstrate how the elements of the above analytical decomposition are united within a web of relationships. The entanglement of asymmetries, differences, place, time, strategies, tactics, mediums, resonances, power and persuasion through narrative should allow us to give texture, depth, and movement to an otherwise quite static snapshot of connected social relations. The conceptual pairs of distinctions described above should only be seen as a

specific case-related toolkit to reassess the creation and functioning of lobbying networks. Another case would have another kind of toolkit and different distinctions or relevant pairs of concepts depending on the specificities of the case.

For British producers the declining price of salmon in the EU market was embodied in the rise of non-EU salmon imports. To prove this asymmetry they began gathering information to demonstrate the differences between them and non-EU producers. They did so by pointing to dumping practices, quality of salmon, and impacts on the local rural economy. This was a strategic move as it was defined by a group of small and medium producers organized in the European Union Group of Salmon Producers (EUGSP). Thus, creating a proper place (the Group) they were able to target competitors and made themselves visible. With the creation of the Group, they also presented themselves as small-scale and locally-owned as opposed to the large-scale transnational Chilean and Norwegian companies, proving once again that asymmetries need to be effectively demonstrated even through the creation of organizations. In short, they embodied the price crisis in the form of guilty foreign salmon. Effective and strategic lobbying included the timing chosen by EUGSP to pressure British politicians during political elections, so their demands, which weren't new, finally resonated finding the right disposition of vote-hungry politicians. The producers also enrolled their fellow colleagues from Ireland, and the Irish government joined the British appeal since they did not want to be seen as withdrawing support to an already amplified public issue. The small producers of Scotland, perhaps the most marginalised in the global farmed salmon trade, gained considerable power by exerting strategic action with the right timing, appealing to market asymmetries and persuading trade authorities to apply the technocratic resource of trade defence: safeguards. The medium chosen by British and Irish politicians and producers was an official complaint to the External Trade Commission and was tactically presented during the arrival of a new British Trade Commissioner. The EU Commissioner was persuaded to respond to his mandate and direct the technical investigation that led to the writing of a document and the imposition of the safeguards. The EU producers resorting to the regulatory power of the EU Commission transformed the peril of being out-competed into a threat to exporters. The case now drifts to non-EU producers whose differential responses forged alliances with their own broker-states and the mobilization of European interest groups – processors and consumers – in order to overcome or transmute the safeguard measures so they caused the least possible harm. Non-EU producers' first response was to turn the asymmetries of size into an issue of efficiency: they responded to the accusation with a counter accusation that the EUGSP was the least efficient and had the lowest quality product. Here again we see, that the labouring of trade networks – meticulous but nonetheless subject to contingency assemblage – lies in the open-ended construction of new differences.

On situated-ness and blind spots: A short note on methodology

The methodological challenges faced during the research of lobbying practices reinforced my conviction as to the inseparability of methodology and epistemology. As stated in Chapter Two, an engaged researcher should constantly fight against the tendency to drift into Cartesian practices of science. In the lobbying case, this awareness implied recognition of the limits of ethnography for tracing complex situations that go

beyond observable interactions or situated events. Or differently phrased, the strength of ethnography as an engaged methodology/epistemology stems from its situated-ness - the experience of being present - which when not possible undermines the legitimacy of the narrative. In order to tackle this point, I put forward two aspects of the lobbying case that need further methodological consideration: 1) the trade-offs of multi-sited fieldwork, and; 2) the issue of situated-ness in backstage transactions.

Ad 1. On the (relative) importance of multi-sited fieldwork.

The narrative of this research is fully shaped by the researcher's capacity for mobility. Conversely, the researcher's capacity for mobility has been actively altered by the encounter of narratives and situations located in multiple places. The whole chapter is a thread of different actor's narratives in mobile situations, facing mobile and changing objects (safeguards, news, salmon shipments, travelling experts, etc.). As discussed in Chapter Two, the value of multi-sited fieldwork lies in the translation of the researcher to various localities that allow her/him to enhance the changing meaning of a social situation stretched beyond cultural and territorial boundaries. That is why I chose to refer to the process as multi-sited *fieldwork* – the ambulatory-exploratory experience of the researcher, as opposed to the encompassing method of multi-sited ethnography. In Chapter Two I also pointed out that methodology/epistemology is the instant adaptation of proper and available methods to look at something that catches our attention vis-à-vis the necessary awareness of changing positions and circumstances in our surroundings allowed through exploratory movement. As Gibson signalled, it is this *motion perspective* that affords us a panoramic view as opposed to a static portrait-like snapshot (Gibson 1979: 122). In the lobbying case, the panoramic view has been drawn in a narrative captured through the researcher's mobility across different locations as the case unfolded but it was also conditioned by the affordances and constraints of the research environment (budget, time, contacts, interviews procedures, etc.).

For instance, in the example above of British producers creating a trade controversy I focused on a particular situation during the case while highlighting the (partial) connections made by the researcher. In so doing, I tried to get as situated as possible to describe a reconstructed panoramic view. This reconstruction, however, did not demand or imply my physical presence at all events and, therefore, I cannot pretend to create a fully coherent narrative. However, the reconstruction is based on the ethnographic capacity to engage *ex-post facto* with the subsequent chain of actions which sometimes is the only option left for us to pick up traces, clues and information about certain cases. In complex and multi-locale events our capacities to detect and pick up information does not diminish but changes from face-to-face or direct experience as a primary source to a combined search for traces (something methodically done by historians and archaeologists). The legitimacy of this movement lies in the imperative of specifying the activities of information detection and not taking them as epistemological assumptions (Reed 1996: 25). This problem undermines a lot of research because it conceals the shift from gathering information to generalizations or abstractions without explaining where and how 'data' is made available to the researcher.

I must acknowledge that the possibility of such a high level of mobility is a privilege and not always possible. An alternative to this costly and highly demanding mobility may be to assemble a research network, a seemingly common practice nowadays, but with a number of institutional restrictions (funding, institutional agreements, workload,

methodological consensus, styles of work, etc.) that conspire against the immediacy needed to move with the speed of events underway.

Ad 2. On backstage transactions or the difficulty of being located in crucial (inter)actions.

The recognition that certain actions relevant for the practices of lobbying occur out of sight of the researcher entails a major methodological challenge. I will refer to these difficult-to-research interactions as *blind spots*. To overcome these blind spots, I posit two options that are both informed by Ervin Goffman's concepts of backstage and front stage developed for the study of micro-interactions (Goffman 1959 [1974]). The first option is studying interactions and transactions in backstage locations which nonetheless does not ensure that we will reach certain locations due to the reluctance of the parties involved to allow an outsider access during processes of negotiation. A second possibility is to assume that certain interactions do occur to which we are not privy, so we must look instead at the traces left behind by lobbyists (negotiation techniques, meeting places, informal agreements then translated into formal ones, etc.). I followed the second strategy.

Due to the confidential nature of politico-business negotiations, I could not bear witness to all of the actions as they unfolded. Thus, to reconstruct certain key interactions I concentrated on encouraging the interviewee to think back to the settings where (some) minor and relevant interactions occurred through questions like, for example: Did you contact advocates by phone? Did you meet your informants at a restaurant? How many people took part in the meeting? How was this informal agreement set-up? These questions, apparently irrelevant to the conversation, were often surprising for the interviewees but proved to be of great importance for recreating how lobbying networks are instantiated. In addition, in order to go beyond the interview itself, I spent some time in Brussels hosted by a friend who was doing an internship at the EU Parliament. I was not allowed to follow him through his work routine (hence, powerless to enter into the EU workplace) but I did actively engage in his after-work social life. Meeting his friends for a coffee, beer or dinner, going to parties or social events organized by international staff, and taking the opportunities to talk to junior EC cabinets' members was of enormous value. I observed how many policy-making issues drifted to social arenas outside the workplace. The EU was also being performed in leisure spaces. Decisions were taken in these settings, information was exchanged, and contacts were made. Then again, the importance of situated-ness given by multi-site fieldwork, proved to be important for overcoming blind spots. The personal experience of a social site beyond the instrumental intentionality of the research may be relevant later for the meaningful interpretations of interactions. That is the importance of being in-place: the value of situated-ness.

The politics of lobbying

I want now to come back to the question posed at the beginning of this chapter: what is lobby? By now, it should be clear that lobbying is a set of practices embedded in the functioning of certain institutions aiming to influence political decisions. Moreover, if we accept that lobbying practices are not just embedded but *afforded* by institutional

settings, we must then proceed to reverse the logic and inquire how these institutions are shaped by lobbying practices. The case presented in this chapter focuses on an international trade controversy but, importantly, it also shows that protectionism and liberalization are not dialectically opposed but *dialogically* mediated by lobbying practices. This is not a trivial issue because most critics of the current functioning of international institutions tend to overlook the practices behind the constitution of global markets and commodity flows. Consequently, neoliberalism is presented as being driven by a single logic that opposes and undermines nationally-based economies which are founded in protectionist claims to sovereignty. Thus, by reducing everything to ideology the world of trade is presented as divided between two poles: those who pursue liberalization and those who claim protectionism. Import-competing activities will lobby to stop the flow of competing commodities, whereas exporters will support trade liberalization to gain access to foreign markets. The equation is no longer that simple.

A focus on practices methodologically worked out through a trade controversy network demonstrates that the contemporary State operates ambiguously according to the changing interests of its various actors. It also shows that different States vary in their involvement and efficiency to manage controversial issues in international arenas. A case in point is Great Britain, which might be a good example of a liberal government, yet in the salmon market case some British representatives triggered protectionist measures in favour of small producers. Another case are the cross-interests exhibited by the Norwegian government who on the one hand defended their own salmon farmers while, on the other hand negotiated solutions that would not threaten their largest companies' interests (including State-owned companies) through by-passing the trade constraint and making use of trans-nationally owned units of production to reach alternative markets. Then, we have the actions of the Chilean government, which showed a surprisingly efficient and coordinated response to represent salmon business interests at various international institutional settings. Finally, the picture gets even more complicated if we think that all three government and business representatives did not act as one isolated strategic unit but through diplomatic coordination among themselves and with third parties (Denmark, France, Spain and European Interest Groups). As Barry and others have remarked, neoliberalism involves less a retreat from governmental intervention that a re-inscription of the techniques and forms of expertise required for the exercise of government (Barry et al. 1996: 14)

There is no doubt that we live in neoliberal times but as shown in the safeguard case "*free trade"* needed to be freed. In other words, the liberalization of trade needs the constant performance of certain practices. Actors do create international trade through collective engagement during the practice of their activities, re-inventing the rules of the game every time. That is what makes it so difficult to define the locus of ideology. If we go down to the site of practices, the two-sided ideological opposition (liberalism/corporativism) that previously seemed clear now appears untenable. If we want to make a serious criticism of the functioning of certain institutions – the State, international organizations, multilateral fora – and the practices embedded within them, we first need to recognize that institutions are shaped by dispersed practices, heterogeneous actors, and specific materialities.

As I have outlined in Chapter One, social practices are constitutive of groups, organizations and communities insofar as they provided intelligible ways of doing things. The practitioner's performance is judged or evaluated as appropriate or not

according to a shared understanding of procedures, norms and values given over time by practices themselves. These practices might signal appropriate schemata of actions but they do not determine actions. These practices need to be enacted each time anew, which explains the changing configuration and the emergence of new possible modes of actions. For instance, lobbying at the European Commission entails both the enactment of a set of practices and the particularity of what is being lobbied (the objectification of the influences). Different communities of practice might engage and intersect in the performance of a certain issue at stake, such as lobbying to restrict or open the EU salmon market. The interlocking of various communities of practice form a *constellation of practices* which is a bundle of related activities pragmatically engaged in a specific situation. For instance in the case under study, different communities of practice such as advocates, diplomats, officials, activists, researchers, business representatives and governmental experts whose concerns and activities may go well beyond lobbying are, nonetheless, united in a network that assembles them in a *constellation of lobbying practices*. Irrespective of differences in language, resources, styles of work, proximity, absence or presence, they have an influence over the specific constitution of the salmon market. In some cases, a group of actors might not be enrolled, which does not mean that they do not know the rules of the game and, if mobilized, they can play a part in the constitution of a specific network.

The big question that remains unanswered is that of the legitimacy of these practices: What is democratic in the practice of lobbying? Or, what is democracy after lobbying has become the channel to resolve disputes? Back to our case: initially, the controversy was amplified, hence a corporative trade sanction was turned into a national issue and then translated into potential local threats. Certain arguments were made explicit but at the same time, lobbying activities remained concealed, underground and low profile. Lobbying had a public face, officially expressed, defined in terms of strategic goals and channelled through formal procedures, but the tactics, the unofficial movements, the hidden trade-offs, remained shrouded in the secrecy of lobbying. The politics of lobbying might be understood as based on a paradox: there is an issue made public but to be effective it needs to be worked out at backstage locations, silently and tactically netted. Lobbying networks are at certain points restricted and silenced, in others they are stopped short and ties are cut. Nonetheless, they are never completely dismantled as lobbying controversies entail a *style of silent work* that remains latent.

One may still wonder how these lobbying networks operate when State interests do not coincide with those of the interest groups at stake. Alternatively, one might question how certain other groups are unable to access such influential positions to present their own interests. The problem with being uncritical of the brokering role of the State lies in the acceptance of the arbitrariness of ruling elites to express power through the choice of whose interest to represent and how and when to hinder access to the representation of other, less economically-laden values. The objectification of interest as an impersonal, unattached reality – 'a national issue of concern' – in practice was nothing but the legitimation of State intervention in serving corporate interests. In this lobbying case, the Chilean government *enlarged* the State to incorporate business people working in the salmon sector. Thus, in the safeguard case, the Chilean State was truly composed of a segment of governmental officials *and* salmon farmers 'defending' a 'national' interest deemed to be relevant. The State, as my example suggests, will change its constituency according to the situation and not to a citizenship mandate based on the

equity of access to governmental resources. Therefore, a major issue in terms of making the current practice of democracy transparent, is to identify the forms through which this *situational State* served as a broker for specific constituencies vis-à-vis the practical basis of legitimizing its actions. In sum, the politics of lobbying is a prime example of the *brokering role* of contemporary States and the practical redefinition of *private-public boundaries*.

The (de)construction of a trade controversy: towards a conclusión

The disclosure of a discursive escalation regarding a safeguard case occurring at various global trade arenas might be seen as example of the geometry between the *creation of objects* and the *means to represent* those objects. This *objects-means geometry* is understood by paying attention to the proportionality of what was being represented – the threat to EU salmon producers versus the crisis of non-EU fish farming - and the means of representation – safeguards, news headlines, diplomatic notes, technical teams of experts, etc. In sharpening the focus, I have shown that the object and the means for representing this international trade controversy is, indeed created, mediated and performed to a great extent by *lobbying practices*. Lobbying is a long established activity but it has taken a new shape with the growing internationalization of decision-making arenas. Despite this process, market-oriented accounts of social order tend to omit that lobbying practice is one of the central 'visible hands' acting in contemporary markets which, far from self-regulated, are comprised of active intervention by interested parties. Ethnographic description of these practices does not aim to denounce the asymmetrical production of controversies but rather to demonstrate how these claims are sustained through the creation of more differences, the enrolment of allies, and the active mobilization of counter measures. Indeed, the purpose of this chapter has been to describe how differences are made *in* places and *over* time by the *strategic* and *tactical* coordination of actors and resources, employing the concept of network as method and metaphor.

The case has also shown that the production of discourse as media statements had little impact in the field, that is at the local community and production sites, since it did not challenge the practices involved in the daily activities that make up salmon farming. But it had a huge effect on catalysing a cascade of interactions that put to work a whole array of visible and less visible practices of information monitoring, translation and foresight. These practices were generated by lobbying networks. We might think of them as being performed by concrete actors through an arrangement of settings and means, many at a distance, which allow the deployment of symbols such as media statements, advocacy offices and, diplomacy codes, in order to address the interests of particular groups. I suggested that lobbying practices seem to rely on the power of persuasion which has developed into a highly sophisticated constellation of techniques carried out by professional advocacy teams – some within the State apparatus – whose livelihood depends on offering the service of exerting influence across a wide arrange of interests.

Practices of lobbying are a constitutive part of international trade and are highly illustrative of the current brokering role assumed by national States. Understanding the functioning of contemporary lobbying networks has taught us a little more about some

of the current practices that sustain and maintain liberal frameworks of activity within international trade arenas. Lobbying networks are actively constructed, they are recursive in the sense of appealing to an existing background of experience and institutional settings that *afford* its performance (in the European Commission, National Ministries, business corporate directories, advocates bureaus). Nevertheless, they are also 'invisible' in the sense that part of their functioning is privately performed and accessing *blind spots* is exceptionally difficult from a research perspective. That is why lobby practices have remained in this semi-obscure sphere of secret negotiations before decisions are made public.

International trade lobbying networks constitute ways of ordering and interconnecting both local and global interests through specific communities of practice that know how to play the game (diplomats, advocates, trade representatives, NGO's activists, etc.). I hope to have made clear that the concept of network employed throughout this chapter is metaphorical – a resource to represent a controversy rather than a fixed social form or a theory of any sort. Networks are brought into existence, instantiated, created anew and put to work through the hard labouring of heterogeneous actors. Networks from this perspective are the actualization of social relations in multi-localized controversial situations as well as the work that brings them into existence. The use of alternative abstract metaphors to describe 'the social' (structures, systems) is not exclusive but can be complementary insofar as we show both *how* they are linked to empirical processes and the considerable work needed to keep concepts closely tied to changing realities; a permanent work suitable for ethnographic research.

Notes

[1] A first version of this chapter was presented at the XXIInd Congress of the European Society for Rural Sociology in Wageningen, the Netherlands August 20-24 2007 in Working group 18, entitled: 'Europe and Beyond: Methodological Challenges towards a Rural Sociology of the Global?

[2] The main press records used to reconstruct this chronological account came from Chilean newspapers *La Tercera* and *El Mercurio*. I also drew from the Chilean online news source *Aquanoticias* (www.aqua.cl), *Ecoceanos* (www.ecoceanos.cl), and the International/Norwegian online agency *IntraFish* (www.intrafish.no). Aquanoticias is a specialized press company belonging to the private-public venture *Fundación Chile* that proved to be a key resource for this research since it follows and records all news related to aquaculture.

[3] The measure was published on February 5 2005 in the Official Journal of the European Union. The document was under the heading: "Commission Regulation (EC) No 206/2005 of 4 February 2005 imposing definitive safeguard measures against imports of farmed salmon". In 22 pages, the document explains the procedure, cooperating parties, the technical justification of serious injury as well as its causation, and details the safeguard measures (Official Journal of the European Union L 33, 5.2.2005, European Commission 2005a).

[4] The different tradable categories of salmon (frozen, HG, fillet etc) demands from the EC Trade Commission experts to create an equivalence system. Thus the quota was calculated on a whole fish equivalent basis (WFE) and the conversion ratios for non-fillets and imported fillets was set at 1:0,9 and 1:0,65 respectively, (European Commission 2005a).

[5] The official presidential tour in Europe included visits to the Netherlands, Norway, Sweden and Spain. I selected three press headlines as examples of how the news was announced; "European tour: the President pursues the salmon case" (El Mercurio, 30/03/2005); "President Lagos will defend national salmon farming in Europe" (Aquanoticias, 30/05/2005) and; "Salmon Producers expect Lagos to send a strong message against the EU barriers" (Aquanoticias, 30/05/2005). The European travel ended abruptly due to Lagos' mother's passed away, which forced the President to return quickly to Chile. Therefore, the highest-level lobbying meetings were not held.

[6] The standard technical definition of a safeguard for international trade purposes is found in Article XIX of the GATT. This article permits members of the WTO to restrict imports into their markets "[i]f," in the words of paragraph 1(a), "as a result of unforeseen developments and the effects of concessions incurred by a contracting party under this Agreement, including tariff concessions, any product is being imported into the territory of that contracting party in such increased quantities and under such conditions as to cause or threaten serious injury to domestic producers in that territory…" (from Hindley 2007: 7).

[7] For the purposes of the EU legislation injury is defined as "material injury to the Community industry, threat of material injury to the Community industry or material retardation of the establishment of such an industry". The latest EU Anti-Dumping regulation came into effect in March 1996. Another two concomitant conditions that must be met before applying anti-dumping measures are: i) finding dumping: the export price at which the product is sold on the Community market is shown to be lower than the price on the producer's home market, and: ii) the interests of the Community: the costs for the Community of taking measures must not be disproportionate to the benefits (see at the External Trade Commission site: http://ec.europa.eu/trade/issues/respectrules/anti_dumping/ index_en.htm.)

[8] Besides the technical procedures, Hindley suggest that this arithmetic is based on a particular mechanical rationale: "The thought that a remedy is needed reflects the mechanical notion of fairness to which anti-dumping gives rise – or perhaps which gives rise to anti-dumping. In the anti-dumping world, prices set at less than cost are unfair. In the real world, a producer might sell below cost for entirely legitimate reasons, without any hint of unfairness. The most obvious case is when an industry experiences a global slump in demand" (Hindley 2007: 5).

[9] To illustrate how certain procedures that aim to correct the malfunctioning of markets can become a blocking mechanism, I find it interesting to consider the following quote from Brian Hindley: "New rules and methodologies have multiplied to deal with 'threats' that are not even half plausible – until it is antidumping, not dumping, that acts as a clog on world trade" (Hindley 2007: 5).

[10] I interviewed him in November 2005, seven months after the safeguard case ended with positive results for Chilean producers. The procedure for contacting him and making an appointment was facilitated by one of his nieces, who happened to be a university friend of mine in the Netherlands (a tactical but common practice that in Chile we call *pituto* – a subterfuge that uses acquaintances to access information, positions, etc.)

[11] On July 2002, the first accusation of anti-dumping against Chilean salmon exports by Scottish and Irish producers, took place. The complaint was taken on board by the External Trade EU Commission, which opened an investigation. At that time, the Chilean Chancellor labeled the controversy as 'a problem between privates' (Ecoceanos news, July 10, 2002). Apparently, this strategic dwindle was to preserve a favorable political environment at the final stage of negotiations in the Association Agreement. One year later, a second controversy sparked when in July 2003, a 180 ton shipment of Chilean farmed salmon was detained in Rotterdam (The Netherlands) due to the detection of traces of malachite green. Malachite green is a toxic synthetic dye used to color silk, wool, jute, leather, cotton and paper. Malachite green has traditionally been used to treat fungal infections on fish eggs. Leucomalachite, a by-product of malachite green, may persist in fish tissues over a long period of time. It has been proven that Malachite green may have carcinogenic effects and thereby its use in aquaculture was banned.

[12] Published in El Mercurio 08/02/2005 and reprinted by Aquanoticias under the heading: "Safeguards risk a USD 250 million investment in Aysén". The news interviewed general managers of the two largest companies operating in Aysén. Extracts of this interview were later reprinted by different local newspapers.

[13] Important exceptions are the figures of Priest Antonio Ronchi – el cura Antonio – and the Major Eugenia Pirzio-Biroli – Doña Eugenia. Their exceptional influence on peoples' lives must be found in their close interaction – face-to-face – in the construction of the town of Puerto Cisnes, over time. They did not embody the State and the Catholic Church. Their indisputable authority is a kind of recognition that is not based solely on the power of representing institutions, but on the proximity and human-ness of flesh and blood charismatic beings mirroring the life endeavor of every settler.

[14] In my view there is no need to replace social relations or actors' resources with the concept of networks. The justification to do so was a fashionable change to represent inter-connectedness and interactions among individuals without resorting to the problematic use of structure. However, in principle this definition of network does not change the basic characteristic of enduring or recursive social relations. For a comprehensive revision of the use of network as method, metaphor and form see Knox et al (2006).

[15] The detailed description of the adjustment of individuals' activity to changing social situation is the main legacy of the studies of interactions done by Erving Goffman and later taken up by the ethno-methodologist. Goffman, refers to performance as: all activities done by an individual which occur during a period marked by his continuous presence before a particular set of observers (Goffman 1959 [1974]: 32)

9

Conclusions

Development as regional fields of action

> *Communities are not to be distinguished for their falsity/genuineness but by the style in which they are imagined* (Benedict Anderson 1983 [1999]: 6).
>
> *Human beings do not construct the world in a certain way by virtue of what they are, but by virtue of their own conceptions of the possibilities of being. And these possibilities are limited only by the power of the imagination* (Tim Ingold 2000: 177)

In 1983, Benedict Anderson wrote an influential book about the origin of the nation and the spread of nationalism (Anderson 1983 [1999]). His overall argument addresses the topic of how certain historic elements that became narratives of national identity helped to construct a bordered world with a mosaic of nationalities made of sovereign and limited imagined communities. Anderson was not interested in questioning the many tensions and conflicts arising from a national ordering of the world, neither if the sources of this nationalism were based on genuine or invented values. He was primarily concerned with the formative process of these nationalities choosing an anthropological perspective to describe how certain groups identified themselves as living parts of a political community despite that in most cases they would never know their fellow members (Anderson 1983 [1999]: 6).

To certain extent, I have taken a similar path to reflect upon a different although related development: the study of some of the contemporary processes that have progressively built a sub-national regime of regions. This contention is not equivalent to saying that regions are replacing a world order still constructed upon nation-states, but that the regionalization of certain processes are altering or subverting some of the national or local fields of actions. Mainstream contemporary literature on regions has tried to explain the causes by which these geographic units gained centrality and strength focusing on the changing patterns in the localization of production of globally demanded commodities. Improving the exportability of regional production has become a powerful argument by which nation-state authorities seem willing to endow resources and decision-making attributes to regional governments and economic actors. This process, though, occurs without the replacement of strategic national political institutions for the control of the territories but only by driving the changes towards new forms, processes and procedures that are basically oriented towards encouraging the insertion and competitiveness of regions in international markets. The issue of whether regions are threatening or displacing the role of national states in the control

and the government of territories, despite the attractiveness of the argument, is beyond the objectives and interpretative scope of this work and therefore remains unresolved and open-ended for further research.

Instead, this book has proposed to reconstruct the *social life of regions* by focusing not only on the processes and activities that have transformed territorial units into changing objects of intervention but also on the practices and sites that transformed regions into meaningful fields of actions through which people carry out their life projects. Briefly summarized, throughout this book the social life of regions has shown the transit by which the *scientific object* of geographers and economists was transformed by means of a gradual process of regionalization, into *techno-political objects* for the territorial planning and the spatialization of production. The main contribution of my research is an interpretation of regions as *social objects* that has emerged through an ethnographic approach to the way people inhabit, work and imagine a region creating socially meaningful territorial relations.

The path followed in this book began by studying the growth of salmon farming in the Patagonian Region of Aysén in southern Chile as a concrete case that delved into the practices by which the regionalization of development was made possible and, concomitantly, to explore how this process made the expression of a multiplicity of actors and practices that give life to regions viable. A perspective that emphasized the social life of a region offered a sociological interpretation that included not only the regional modes of production but the sites and practices producing a region. This stance is rooted in the belief that in the study of development situations the ethnographic description of actors' practices and the sites in which they occur provide a richer picture of the heterogeneous associations that compose social life. The interpretation I offer in this book differs from normative or rational approaches by remarking on the creative expression of human experience in the associative forms that construct differentiated and socially meaningful worlds.

The following sections of this chapter present the main conclusions drawn from the empirical elements provided throughout the book and are organized around the research questions stated in the introduction. They will subsequently touch upon i) the form by which the regionalization process opened new territorial fields of actions; ii) the importance of trade and off-region networks in the constitution of activities and regions; iii) the differences between a technocratic and a pragmatist understanding of region, and; iv) the importance of describing these processes in terms of practices and sites for the democratization of the region-making experience. The general question of this research - what is a region? – is answered at the end as a closing argument of the book.

Regional fields of action

This section aims at answering the research question: what has the concept of regions added to the notion of development? As explored in Chapter Three, for a long time regions have been thought of mainly as sub-national units of economic functions and homogeneous cultural characteristics. This functionalistic notion of region was eagerly promoted in the mid XXth century by geographers, economists and planners for whom sub-national territories become the adequate locus for the coordination of economic

development. Later in the 1980s, regions are again placed at the center of social research by social scientists who embarked on evidencing the transformation of fordist modes of production. This post-industrial turn to regions offered an interpretative path beyond the functional and economistic perspective to embed the modes of regional production and governance in specific territorial and ecological relations, institutions and local culture. However, the analysis was still restricted to the factors that explained why regions are capable - or not – of integrating territorial activities and actors within the global economy. During this time, Euro-American academic writings on regions contributed not only to make certain processes visible, but to reinforce world wide the politics of regionalization. Accordingly, many of the contemporary region-making processes are a consequence of these politics, and exhibit a bias to the allocation of resources that induces a regional spatialization of economic activities, the hierarchical ordering of settlements and the subordination of social institutions to regionally driven aims. This view has slowly given way to a territorial reconfiguration of development by which experts attributed not only economic functions to the region, but started to view the region as the locus where socio-technical changes are easy to coordinate taking into account culturally embedded practices and emergent territorial identities. Nevertheless, during a great part of the long term process described, the *regionalization of development* was primarily a change in the locus and the scale of actions of social intervention oriented mainly towards including territorial relations that escape the rural/urban distinction and to improve issues of institutional accountability that large and central national agencies could not grant.

The Chilean state incorporated the concept of region as a formal unit within the politico-administrative division of the national territory in the 1960s, although this change never threatened the centralist and unitary principles of the sovereign state. Thus, the Chilean case becomes a good example of the regionalization process described above, although we should not overlook that the case may have some particularities due to the early adoption of the category of region, a process that probably facilitated – and even anticipated- the conceptual and institutional turn to territorial development.

Throughout this book, I have attempted to advance in a different direction than that of the regionalization perspective by revealing the formative and qualitative aspects by which global economic activities, such as the case of salmon farming in southern Chile, have become increasingly interdependent of a new pattern of territorial coordination and allocation of resources. In Chapters Three to Eight, I present different sites and practices that demonstrate that the expansion of salmon farming to the Patagonian Region of Aysén developed mainly thanks to the existence of what already in Chapter Three was called ***regional fields of action.*** The notion of regional fields of action provides a different interpretation to the examination of those development processes in which territorial relations become relevant. It entails the recognition of the generative aspects created during the process of region formation. A regional field is the sum of actions performed to materialize processes which, although occuring locally, are presented as pertaining to or integrating broader territorial relations, institutions and resources. A regional field of action allows the articulation of actors in a social space with certain common cultural repertoires, administrative practices, symbolic mediations, and norms which are intelligible for its members because they are produced in a field of interaction – the region – that provides a time-space proximity.

At the heart of this view on regional fields lies a fundamental way to evaluate the pertinence of interventions in concrete social situations which has both theoretical and methodological consequences for development studies. In order to advance upon a novel understanding of development interventions I propose to focus on the grounded meaning as well as the practical consequences of the public/private distinction for different social groups. It is through this specific interface that we have the opportunity to display the political disputes based on different actors' life-worlds and interests. A methodological focus on the disputes stemming from these divergences can give us an entry point to a theoretical debate on the legitimacy of intervention from the state and other agents as well as to deploy the manifold options manifested by social groups through concrete actions. In sum, either in regional or other fields of action, the limits of interventions may be found in the legitimacy that actors render to the form the public-private distinction takes in a given situation.

Food commodities and networks

In which way do economic activities forming part of global industries and trade networks such as salmon farming become constitutive of the regionalization of development? This research has been focused on the nexuses between the salmon farming industry and the region-making process of Aysén in southern Chile. The relation goes in both directions because, as I have demonstrated, the salmon farming industry had concrete effects on the regionalization of development by the same manner in which the region opened fields of action for the territorial configuration of fish farming activities. In a certain way, this process is possible given that *salmon farming* and the *region* are both abstract entities and empirical realities that intertwine to provide fields of action for the performance of specific territorial relations. They are abstract entities when the region becomes an objectified territorial unit for technocratic management and when the variety of activities of salmon farming are unified under the label of the *salmon cluster*; meaning a food export-oriented entity based on geographic proximity and driven by the logic of the markets. They are empirical inasmuch as the region is the territorial matrix where life support systems exist and human activity occurs, whereas the salmon farming industry provides the sites where labor and capital are transformed into specific practices and relations of production.

Nonetheless, not every process that links activities and territories can be reduced or explained by the existence of regional fields that support their expression. Sometimes the region only provides the container and the localization of elements that make certain relations possible, or the representation of relations in a territorially bounded way, but they do not have a strictly regional origin or they may be composed by de-territorialized actors, as in the case of some socio-technical networks presented throughout this book. These socio-technical networks are not restricted to the region-making process, but they are primarily involved in configuring salmon farming as an activity. These networks include human and non-human actors in the configuration of certain de-centered and non-hierarchical relations, or at least in which hubs and hierarchies are reconstructed upon each contingent situation.

Chapters Five to Eight show different processes by which salmon farming has been constituted as a specific economic activity in Aysén and, with the exception of Chapter Seven, they are all presented in terms of networks. The centrality of the concept of

network in social sciences can be partly attributed to the attempts of explaining how the local extends beyond territorial units and physical limits to be formative of a wider set of relations. This is not to say that networks are de-localized or invented out of the blue, but are embedded in a constellation of practices that facilitate its actualization according to the main activity for which a network is set up. The first part of Chapter Five presents different research networks that made possible the biotic movement and the adaptation of salmonid fish in southern Chile. Chapter Six presents the entrepreneurial networks linking distant actors from Norway and Chile that configured the commercial phase of fish farming introducing and adapting key technologies. Chapter Eight shows the lobbying networks integrated by the Chilean state, salmon farmers, trade experts and a wide range of organizations that are players in the scene which performs the rituals that sustain international trade networks and make the commodity exchange possible.

In sum, regional processes are also made of these networks or more properly expressed, of condensed networks that channel the actualization of certain activities by linking situated actors to de-territorialized relations. Under the perspective proposed in this book, networks are not dependent upon, but facilitated by the existence of regional fields of action. In this manner, regions offer a concrete substrate as well as the territorial layout that contemporary trade-related networks can use in the localization of actors and activities.

Regionalization versus regional fields

What are the differences between the region as it is represented by experts and intervening agents and the region as it is inhabited by its settlers and workers and, if these differences exist, how are they created and sustained over time?

The region becomes a techno-political object when it is primarily thought of in terms of a container holding socioeconomic functions. In this research we have seen that this functionalistic and vertical approach to regions stems from a process that I have identified as the regionalization of development. In general terms, it is a process aimed at linking local livelihoods with two domains of intervention. On one hand, a governmental field made of institutional agents – technocrats and experts - who translate local actions to mainstream national goals and directions and vice versa. On the other hand, the geographic cluster of economic activities that allow entrepreneurs, professional staff, and workers the production and circulations of global commodities. This techno-political approach of regionalization favors the views by which salmon farming and regional welfare are simplistically assumed in a direct correlation by decision-makers: the more salmon farming activities producing global commodities the more regional development.

However, the region as a techno-political object is not the immutable reality of a new societal order stripped of social life. There are different realities nested in these techno-political objects called regions. As previously stated, regions are constituted by socio-technical networks stretched beyond regional and national borders, but they are also composed by local people who are not aligned with one-sided views of reality and whose motives for living and imagining a future in their region are richer and more meaningful than being integrated in the latest economic boom. Any description of the social world that neglects the multiplicity of practices and downplays the centrality of

everyday life in the constitution of local realities is an account that impoverishes the human experience of inhabiting and imagining the world. Therefore, this research has proposed a focus on the self-organizing process and the creativity of action to understand how different social groups currently inhabit and construct a meaningful Patagonian territory. As presented in Chapter Seven, even within a technology-intensive and hierarchically controlled salmon farming company there are situations in the production system that cannot be successfully explained if not in reference to the social abilities and situated experience of its workers. Another example is the settlement process of Puerto Cisnes in Chapter Four that provides empirical evidence to the way the process of regionalization is modulated through the construction of life projects that cannot be reduced to a succession of merely economic activities. In this case, we prove that the existence of state institutions trying to consolidate the settlement process as well as economic actors creating market opportunities, indeed provides regional fields of action that are seized or transformed by local actors in attempts to secure their life projects. But the social relations created in the self-organization of the community are equally important to buffer periods of economic depression, state abandonment, or hazardous situations given by geographic isolation.

In contrast, the territorial zoning of Aysén described in Chapter Three shows how the actors labeled as experts seek to overcome territorial controversies either through the introduction of new technological solutions or the normative re-arrangement of the constitutive elements of the dispute. Experts' practices often entail a deterministic view of social life as a mere subject of adjustments and technological interventions which are to be implemented through regulatory means or normative actions. In the case of salmon farming, entrepreneurs and government agents subscribe to the experts' logic and thereby tend to favor the technocratic settlement of disputes. As shown in many chapters throughout the book, local actors seem to be well aware of the political dimension of this one-sided view and deploy their own mechanisms to creatively cope with changes and to modify their living conditions, sometimes making use of salmon farming resources as means of livelihood, at other times opposing or taking distance from objectives they regard as alien to their life-worlds.

In sum, we can advance towards a reflexive and expressive account of social life beyond rational and normative interpretations by focusing on how different relations nested in regional fields are a part of the larger process of inhabiting and of making the region a place for living. If we understand these regional fields not only from the point of view of institutions and companies composed by experts managing and reducing uncertainty, but also as the creative practice of everyday life in concrete social situations, we will find the forms in which regionalization is contested, opportunistically seized by various actors, and sometimes largely ignored by lay people. If we think of regions as multi-sited fields for action we will embrace a pragmatist and democratic perspective that does not neglect the experience of workers, settlers, and other local actors in the constitution of the regional processes.

Sites and practices for the democratization of the region-making experience

This section answers two related questions: In which ways are the practices and sites related to salmon farming as a predominant economic activity contributing to defining

the Patagonian Region of Aysén? And, what is the value of describing the practices and sites that form a region for people's understanding of wellbeing and democracy?

By now it should be clear that this book has set out on an attempt to reconcile the dichotomy between describing a region as an objectified essential category and the multiplicity of practices that afford and embed technocratic approaches of territorial intervention in a broader and complex living region. The discursive nature of some managerial and entrepreneurial views upon the region may be contrasted with the quotidian practices of those actors with the concrete experience of inhabiting, working, and imagining their land in a broader sense. As I see it, the point is not to neglect the influence of vertical technocratic approaches, but to re-interpret the process of the regionalization of development beyond rhetoric postures and functionalistic assumptions by checking its legitimacy in concrete social situations and taking into account actors perspectives. In this sense, the methodological focus on practices and the sites in which they occur has provided the empirical basis for a descriptive work, but also for answering relevant enquiries about representation, meaningful life projects, and the legitimacy of processes of intervention.

Depicting the social life of regions through the multiplicity of situated social practices composing specific courses of actions, such as the expansion of salmon farming, has allowed us to enquire whether a process of regionalization can truly extend regional fields of action for a larger number of actors. It allows us not only to affirm that regionalization exists, but also to describe how this process occurs, and to map the extent and form by which these fields create new effective forms of local/global integration or, if by contrast, these forms of integration only bring new forms of disintegration and social conflict.

One central conclusion to these concerns is that the viability of the salmon farming project in southern Chile does not depend only on the market trends, technological innovation or the regulatory capacity of public policies, but also on a corporate strategy that should abandon hegemonic views of regional development and, instead, leave room for the manifestation and construction of the multiplicity of possible local or regional projects. In this line of thought that Chapter Four concludes by arguing that the successful settlement process of Puerto Cisnes occurred thanks to the permanent coexistence of different livelihood strategies and not through the massive submission of settlers to the latest capitalist enterprise. Likewise, one of the cases in Chapter Five offers the example of the visionary mayor, Doña Eugenia, who understood that the small local experiment of trout farming in Puerto Cisnes was an opportunity for an income generating activity to finance the municipal school. Although the experiment was abandoned, it offered an early communitarian approach with a completely different orientation than that of the private capitalist project that took place later.

Making the multiplicity of regional projects visible is also a valid approach to explore alternative developments within the salmon farming industry itself. For example, as shown in Chapter Six, the emergence of the metaphoric 'Region *Ten and a Half*' challenged previous discursive propositions of regional development as demanding high public expenditure on large infrastructural projects and, instead, contributed to build and make a new pattern of territorial occupation viable, one that was based on the adaptation of technological systems. Nowadays, the search for creative and grounded alternatives to induce sustainable fish farming seems to be a compulsory assignment for

salmon farming representatives given the current scenario of crisis imposed by the ISA virus and the coordinate resistance of different regional actors denouncing a set of malpractices affecting the viability of others activities.

Although these examples of germinal and multiple regional projects were in existence before and independently of this research, they can gain relevance if there is a clear political disposition to identify qualitative differences in previously homogeneous and top down narratives of social change. This is where an ethnographic approach and the use of qualitative methods are crucial in order to describe the social world from an engaged practice of sciences, an aspect that is largely discussed in Chapter Two. A grounded look at processes of socio-technical change shall lead us to re-interpret it on the basis of emergent forms of appropriation and contestation and the reflexive selection of means that actors make from the political and economical context. Throughout the book I have persistently argued that both the *region* and the *salmon farming industry* as abstract entities have material, practical and political consequences that are brought to the forefront of public opinion by different means representing the interest of specific actors. An account of the regionalization of salmon farming as it has been experienced by its inhabitants and also constituted by de-territorialized human and non-human agents has been missing so far. Even if partially accomplished in this work, it may favor the visibility of various actors, the emergence of new objects and may create wider space for the appropriation, resistance and democratization of territorial decisions.

Consequently, one of the main objectives pursued in this book can be summarized shortly as: bringing to light processes, actors and practices for the democratization of the region-making experience. This objective has been accomplished through a pragmatist account of the social life of the Patagonian Region of Aysén in an attempt to regain the importance of actors' experience for a meaningful understanding of processes of social change. A practice-oriented approach to social life deals with the patterns of organization of activities and the site specificity in which they occur, but the same empirical basis can depict heterogeneity, multiplicity and uncertainty and, can thus be justifiably placed in opposition to managerial perspectives by which homogeneity, simplicity, and certainty are the cornerstones for exogenous, planned social interventions. In other words, this research contends that a sociological practice-oriented approach can create a less compartmentalized picture of social life to unveil the complexity of social situations and to celebrate the creative power of uncertainty.

The ontology of a region

In this book I have explored a sociological approach to understand the contemporary process by which some territorial relations are grouped under the notion of region. According to the cases and arguments exposed throughout the book, I propose the following conclusive definition: regions are fields of action generative of new relationships, institutions and actors that can express the power to re-orientate the flux of materials, capital, activities and the movement of people on a territorial basis. Regions may also be the expression of condensed networks comprising many actors and processes that, although are not limited to boundaries, can make relations within a territorial identification possible.

As we have seen, a central aspect in the formation of a region is the exercise of power by actors who deploy persuasive or coercive means to make others act according to territorial orientations and to gain control over territorially linked resources. The administration and control of territories is at the very basis of the origin of the word region, that stems from the Latin *regere* - to rule - and has been extended to territorial units in the western world since the Roman Empire (Benedetti 2009). However, a distinctive aspect in any contemporary region-making process is that the control and management of territories are being actively and effectively configured through practices of techno-scientific regionalization and associated to development guidelines. It is at this point that I think an understanding of regions as fields of action shall lead us to a different interpretation than that offered by the mere description or analysis of regionalization processes. From a practice-oriented perspective, regional fields of action allow us to unite all the outcomes that region-making processes generate independently of whether they are created by rulers, entrepreneurs, workers or local people. A regional field of action is an approach to studied processes of development in a sociological sense by focusing on the effects that the formation of regions has for people's organization of everyday life and the constitution of meaningful life projects.

In this book the Patagonian region of Aysén has been described in its process of becoming through the multiplicity of practices and sites that contribute to reaffirm its existence but also to challenge the limits of reductionist approaches. In Chapter Three, the social life of the region is made of multiple histories that became narratives, practices and procedures that convert it into different objects of intervention through time. This region-in-flux is made by actors who have explored and mapped its geography, defined its boundaries, encouraged its occupation as well as have set regimes of government, planning and territorial zoning. Chapter Four describes how the region needed settlements, which became towns through the many additions that people give to the material and symbolic Patagonian culture while striving to make a living and construct their life projects. Chapter Five argues that the region needed practices that could relate human actors to inanimate objects and non-humans animals. It is the place to expose the long term history of different social agents who introduced a particular fish genre in Chile: the salmonid. The same Chapter also analyzes the process by which fish became elusive agents according to the changing rationale in the nature-society relations. It finally teaches us about the way local knowledge and experience became transformed into practices of domestication, control and coexistence with fish species prior to its commoditization. Chapters Six and Seven show that contemporary regions are exposed to radical territorial transformations stemming from the localization of international trade networks and the production of global commodities. In particular Chapter Six identifies how an emergent regional configuration like the one expressed by the metaphoric *Region Ten and a Half*, was to a great extent shaped by off-region entrepreneurial networks that combined technology and capital to produce changes in the regional organization of production. The re-allocation of technologies and capital created a displacement towards new areas of the archipelago, but Chapter Seven explains the way workers embed and transform labor relations into valuable adaptive and experiential knowledge for the production of successful commodities and the new economic colonization of Aysén. In Chapter Eight we have seen that regional production needed networks that defended and sustained the trade exchange in international arenas. The brokerage role of the state channeled through lobbying

networks opened a window to understand the situated functioning of global commerce by making the hand of the market 'visible'.

In this Conclusion it is perhaps worthwhile to insist that the social life of a region, the condensed networks that give it life cannot be reduced merely to its relation with salmon farming. Still this activity has served as a prime and concrete example of the contemporary process that links global commodities to the territorialization of certain development processes in Chile. The regional approach in this research did not take us away from concrete and situated actors but, on the contrary, it localizes the changes provoked by emergent fields of actions at the ground level where social responses to change, appropriation, conflict and adaptation remain visible as an ethnographic object of study.

Finally, throughout the research process my work has evolved towards a practice of sociology that is geared around expressivity and reflexivity. Expressivity because in interpretative social sciences one can only be aware of the potentiality of thinking by creating committed and vivid accounts of the research process and the fieldwork experiences lived through social situations with concrete actors. Reflexivity is primarily exercised when narratives and interpretations make explicit the epistemological conditions that enable the production of knowledge and the examination of the extent by which these accounts also helped to construct or challenge the studied realities. The written expression of the fieldwork experiences and the reflexive exercise of thinking have been channeled through a number of research principles: the attempt to go beyond universalism by embracing heterogeneity and multiplicity; the attempt to go beyond deconstruction by proposing a re-constructive and expressive account of the new configurations adopted by regional actors and, finally; the attempt to move beyond relativism by emphasizing the relational and concrete effects that creative actions have in transforming the world(s). An expressive and reflexive sociology might be able to creatively join the research account of present conditions to actors' imagination of new possibilities for social change. Research findings are not just mere impressions made by other people, situations, or objects but, when re-elaborated in meaningful textual or otherwise narratives, also become the expression of the researchers imagination. I think the political relevance of social sciences lays in channeling the various expressions of the collective experience of living and constructing the world. I believe it is time to prove the value of reflexive and expressive accounts of social life that move beyond the imagination of power and decisively try to exert the power of imagination, the power to create new possible worlds.

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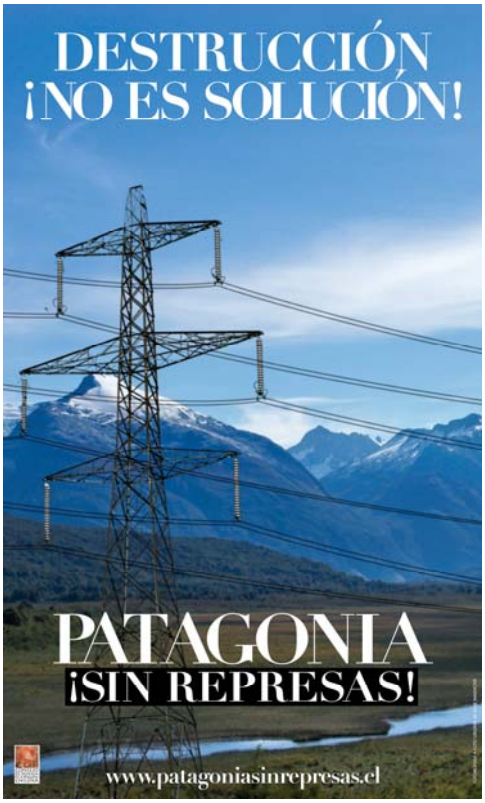
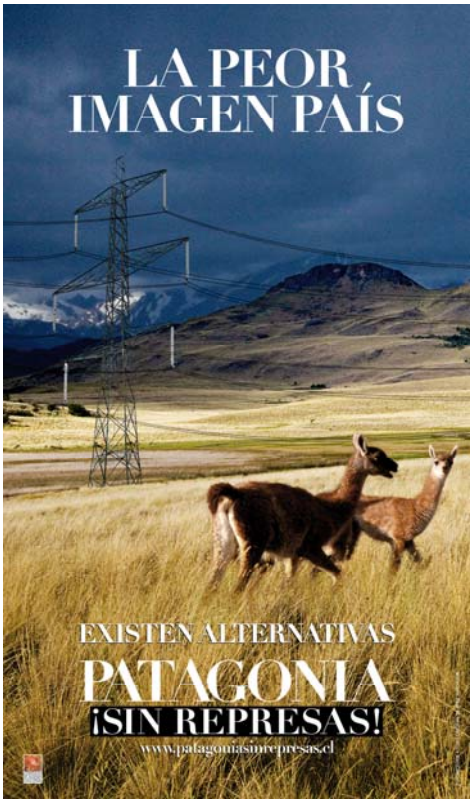
ANNEX 1. Campaigns in opposition to industrial projects in the Chilean Patagonia (2001-2007).





Campaign *Patagonia Sin Represas*– The Patagonia Without Dams – organized by the NGO International Rivers Network (Source: www.patagoniasinrepresas.cl).

Campaign *Global Action Against Salmon Farming*. The Chilean campaign was coordinated by Fundación Terram and used the image of the Chilean rock band *Chancho en Piedra* (Source: Fundación Terram, www.terram.cl)

3. Campaign *No Alumysa* by the Civil Movement *Aysén Reserva de Vida* – Aysén Reserve of Life (Source:. www.aisenreservadevida.cl)

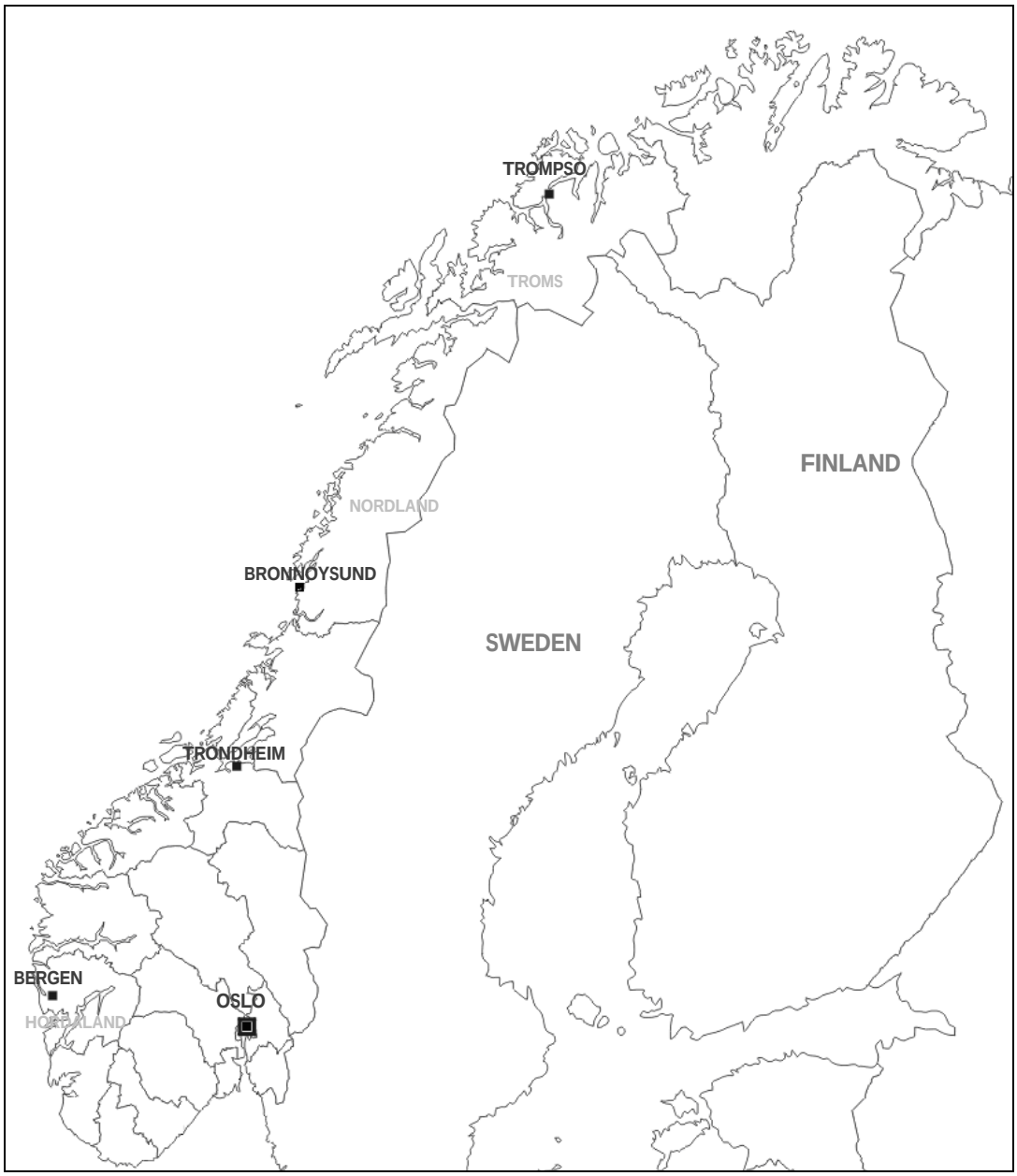
4. Campaign *No Alumysa* by Greenpeace (Source: www.greenpeace.org)

ANNEX 2. Tables

Table 1. Demography of Aysén (1907-2002).		
Year	Population	Inter-Census Growth
1907	436	-
1920	1.660	280,0 %
1930	9.711	485,0 %
1940	17.014	75,2 %
1952	26.262	54,3 %
1960	37.770	43,8 %
1970	50.228	33,0 %
1982	66.361	32,1 %
1992	80.501	21,3 %
2002	91.492	13,6 %

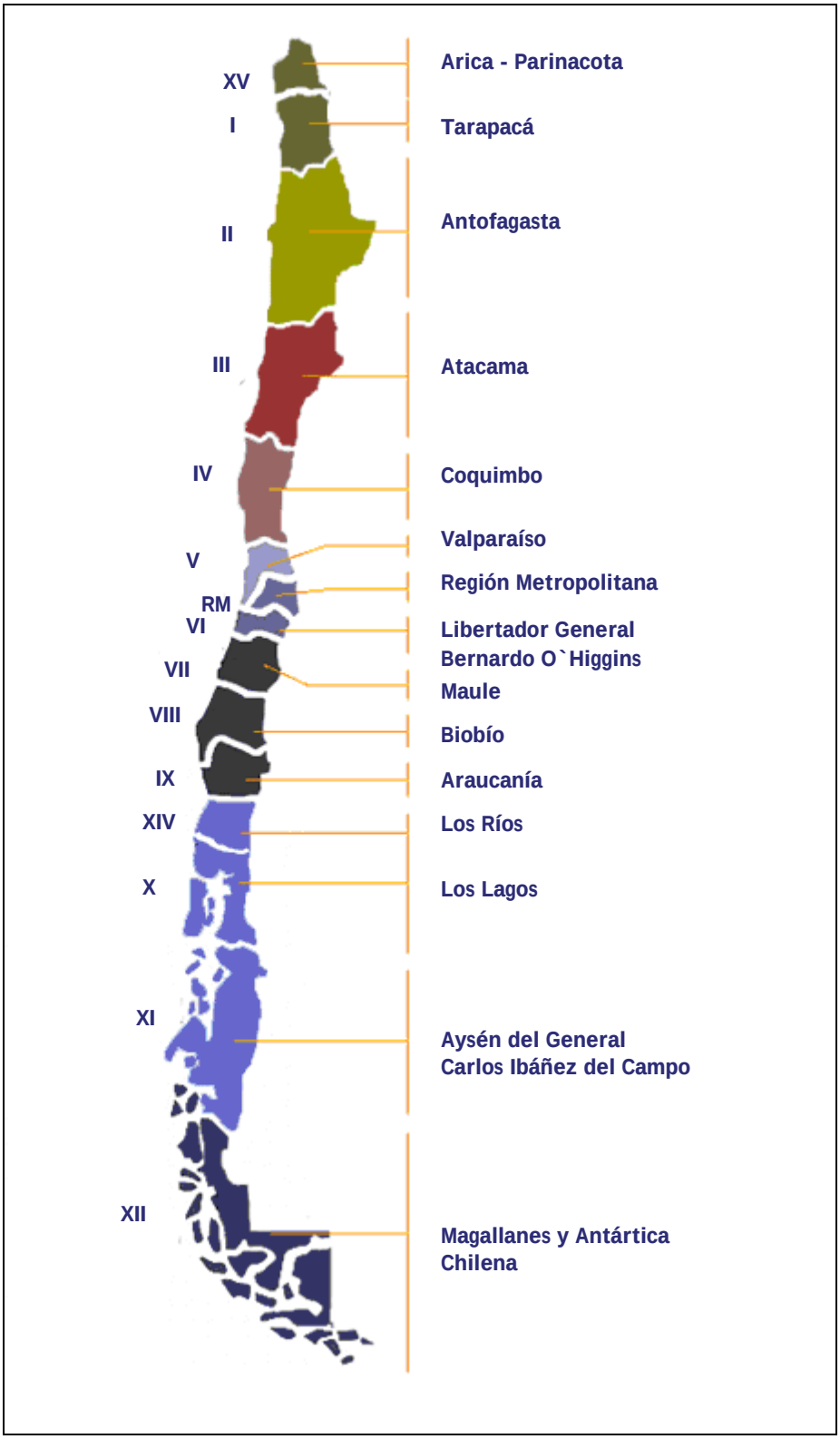
Source: Based on Martinic (2004:474) and the National Censuses by Instituto Nacional de Estadísticas (INE).

ANNEX 3. Maps

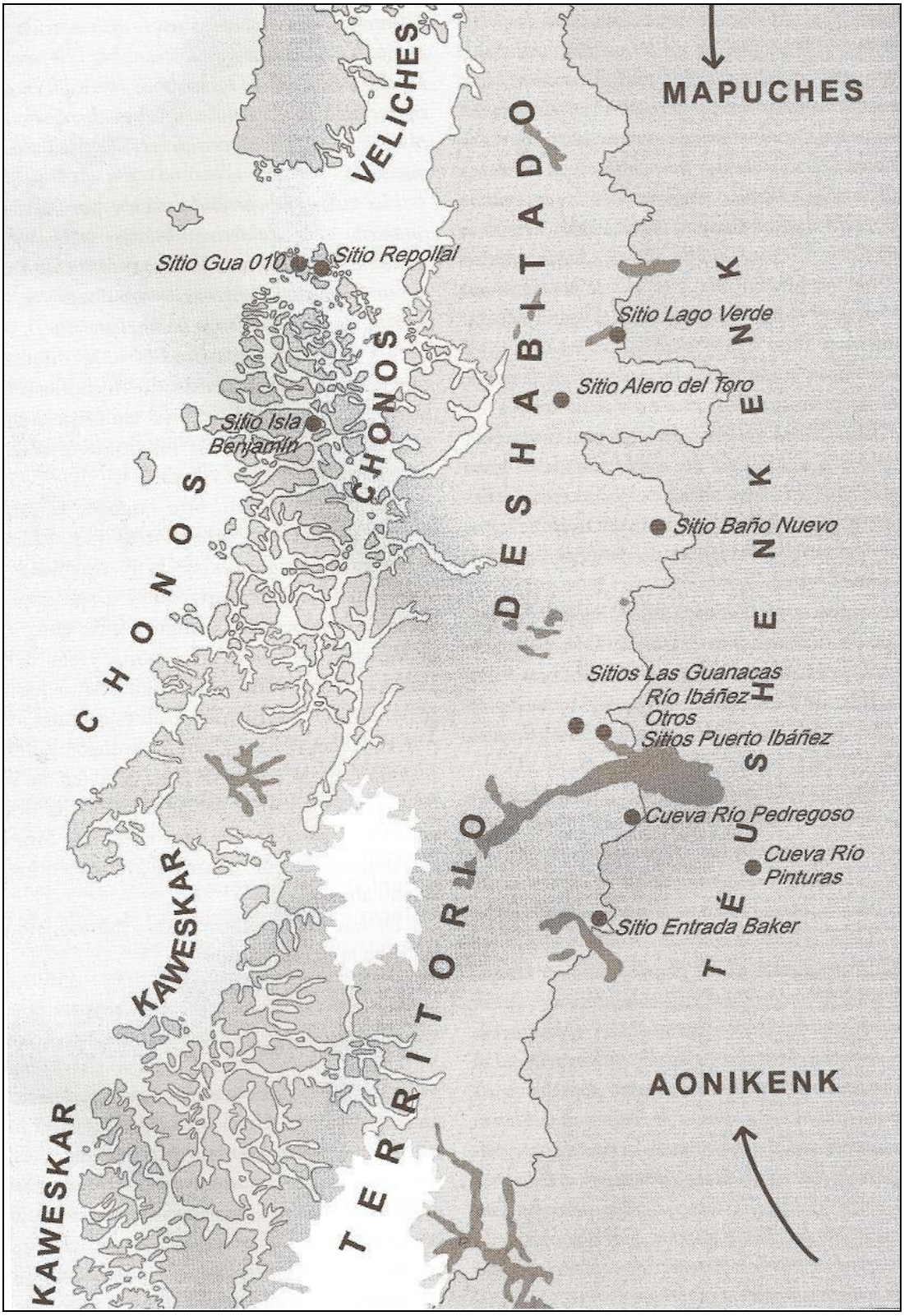


Map 3. Norway

Map 5. Southern Highway



Map 10. Contemporary politico-administrative division of Chile



Map 11. Aysén: Indigenous people distribution (10.000 A.P.- XIX Century) (Source: Martinic 2005: 36)

Map 12. Region Ten and a Half

ANNEX 4. Photos

GRACIAS AL ESFUERZO DEL PADRE PEDRO, EN 40 DIAS NACIO UNA ESCUELA EN PUERTO GRACIELA

LEJOS, en un apartado rincón de la provincia de Aysén, ha nacido una escuela. Y junto a ella, una pequeña iglesia. Todo es obra del entusiasmo, fervor y desvelos de un piadoso sacerdote, el padre Pedro, de la Orden educacionista "Don Guanella", que presta valiosos servicios en nuestro país.

El padre Pedro llegó a Chile procedente de Italia, hace pocos años. Dotado de un alma generosa y de gran sensibilidad, se conmovió ante el cuadro desolador de todos esos niños que viven en un ambiente social irregular. Para ellos creó el Hogar "Don Guanella", en Renca, donde una centena de menores encuentra nueva senda para un futuro mejor.

Desde hace casi dos años, el padre Pedro tuvo la idea de crear una escuela y una iglesia en Puerto Cisnes (hoy Puerto Graciela), impresionado al ver que en aquel apartado paraje donde viven alrededor de 700 personas, se carecía de esos vitales elementos espirituales. Gracias a su empeño, buscó los recursos económicos y, con un puñado de obreros, se dio a la tarea de formar un nuevo nido para los niños de esa región. El 1.º de enero de este año empezaron las obras. En poco más de cuarenta días, tanto la escuela como la iglesia, de firme estructura de madera, estuvieron terminadas. El mismo, con sus ideas, con su entusiasmo, incluso con sus propios brazos, fue ayudando hasta dar término a la obra. Palo tras palo, madero tras madero, clavo tras clavo, ese grupo de hombres fue levantando el nido donde los abandonados polluelos de Puerto Graciela deberían formar su alma.

Por estos días ya se deben escuchar cánticos de gloria en la modesta pero limpia y nuevita escuela de Puerto Graciela, lugar donde jamás hubo plantel educacional alguno. Una cincuentena de niños recibirán allí formación espiritual y aprenderán las primeras letras. Ojalá Chile pudiera tener muchos otros "padre Pedro", que con tanto esfuerzo y amor está contribuyendo, con un granito de arena, a la salvación moral y pedagógica de los desamparados niños que viven materialmente abandonados en los más ignotos rincones de Chile.

ESTOS eran los terrenos que el laborioso Padre Pedro rescató a la naturaleza para levantar en ellos una escuela y una iglesia. Puerto Graciela, 1.º de enero de 1959.

EMPIEZAN las obras. Rudas manos de obreros aysenínos le van dando forma a la construcción. (7 de enero de 1959.)

LA ESCUELA ya está techada y los obreros preparan la tradicional fiesta de "Tijerales". (22 de febrero.)

LA ESCUELA ya está terminada, después de 42 días de trabajo laborioso.

Photo 7. Newspaper record on the construction of the Orphanage and School Hogar San Luis de Puerto Cisnes, 1959 (Source: Municipal Library of Puerto Cisnes)

Photo 8. Street painting with images of Eugenia Pirzio-Biroli and Father Antonio Ronchi. Municipal Gymnasium of Puerto Cisnes

Photo 9. Image of Father Antonio Ronchi. Municipal Gymnasium of Puerto Cisnes

Photo 16. Fish farm worker feeding with semi-automatic system.

Photo 17. Fish farm worker feeding with help of submarine camera.

Photo 18. Team of divers collecting dead fish.

Photo 19. Veterinary and fish farm staff practicing fish necropsies.

EL MERCURIO — ECONOMÍA Y NEGOCIOS | CONFLICTO SALMONERO — B3

Privados: "Quedamos absolutamente con las alas cortadas"

Rodrigo Infante, gerente general de SalmonChile, asegura que las salvaguardias de la UE sí los golpearán, y pide que el Gobierno chileno recurra a la OMC para revertir este dictamen.

DANIELLA ZUNINO

Y finalmente se produjo lo que muchos ya anticipaban. Europa les fijó salvaguardias a las importaciones de salmón provenientes de Chile, además de las de Noruega y de las Islas Faroe. Como era de esperar, la medida tomada por la Comisión Europea tiene preocupada a la industria nacional de este producto. Rodrigo Infante, gerente general de SalmonChile, dice que no sólo afecta los envíos nacionales hacia Europa, sino también al mercado del salmón a nivel mundial. Además, llama al Gobierno a recurrir a la OMC.

—¿Tienen cuantificado el daño que provocarán las medidas a la industria chilena?

"Aquí hay varios daños que se van a generar. Primero, desde el punto de vista de los precios mínimos que se están planteando, están por sobre el precio de mercado hoy, y eso va significar que el mercado se debiera ajustar, y eso va a implicar una menor cantidad de volúmenes transados de salmones en el mercado, porque hay que acordarse que los productores locales no necesitan cumplir con el precio mínimo de importación. Entonces, va a haber un precio mínimo y va a haber un precio en el mercado que va a ser mayor al actual.

—La cuota fijada a Chile es de 16 mil toneladas.

"Dieciséis mil toneladas en el primer período que va hasta el 13 de agosto. Pero 16 mil toneladas se plantean sobre la base de lo que se llama *whole fish equivalent*, que significa la base equivalente al pescado entero, que para llevarla a filete — que es lo que nosotros exportamos para allá— hay que multiplicar ese número por 0,65, que ese número también lo da la comisión, y eso lleva a 10.400 toneladas, y para ese mismo período que va entre febrero y agosto nosotros exportamos una cantidad de aproximadamente 14.000, o sea, sobre 10.000".

"El daño, que es central para aplicar salvaguardias, no está demostrado".

"Ahí ya hay una reducción inmediata de nuestra capacidad actual de exportación".

—La Comisión Europea dice que para fijar la cuota se tomó el promedio de 2001 a 2003 más un 10%. Entonces no debería ser menor.

"No debería ser menor, eso era lo que nosotros también entendíamos. Pero el número que ahora sale efectivamente es de 16 mil toneladas en base a *whole fish equivalent* y es menor a la cantidad que estábamos exportando. Yo estoy constatando ese hecho".

"Aparte de este daño específico, también es importante el potencial de desarrollo de la industria. Las inversiones que Chile ha hecho para el desarrollo de estos productos no van a quedar satisfechas con este crecimiento restringido que nos están dando".

—¿Son muchas las empresas chilenas que para llevar a Europa estos productos de valor agregado hicieron inversiones?

"Por supuesto, porque aquí hay que ver que Chile hace dos años firmó un tratado de libre comercio con Europa. Nuestros mayores problemas para llegar a este mercado tienen que ver con la distancia. Para eso se creó todo

—Es decir, ¿el acuerdo no les sirvió a la hora de que hubo un problema?

"O sea, el tratado sirve desde el punto de vista que nos escuchan y todo el tema, pero el resultado final que estamos viendo no es algo que nos satisfaga ni en absoluto nos deje en una condición mejorada respecto de nada. Quedamos absolutamente con las alas cortadas en esta línea".

—El 9% de las exportaciones van a Europa. ¿Cuánto podría bajar ahora?

"Por esta misma cuota, la proyección es que podría bajar, respecto de lo que estamos hoy, aproximadamente un 10% en términos de volúmenes inmediatos. Pero el efecto no es sólo eso, está el tema de las proyecciones (de crecimiento), y por otro lado, hay otro efecto que es difícil de medir, que es lo que se generará ahora en los mercados mundiales".

"Porque este mismo problema lo tiene ahora Noruega, que es el principal productor mundial y el 90% de sus exportaciones van a Europa. Y para esas toneladas que no pueda colocar en el mercado europeo Noruega va a empezar a buscar otros mercados".

—El redireccionamiento del salmón, tanto noruego como incluso chileno, ¿va a provocar una caída de precios?, ¿de qué orden?

"Es difícil cuantificar cuál podría ser el efecto de caída del precio en otros mercados, y son cosas que vamos a tener que ir viendo, pero sí esto genera una distorsión del mercado del salmón bastante importante a nivel mundial, y eso nos preocupa".

"El daño, que es central para la aplicación de salvaguardias, no está demostrado, tanto así que en estos períodos de investigación de tres años los productores locales escoceses, por ejemplo, han aumentado su producción y su porción de mercado en forma significativa, en más de 4 o 5 puntos porcentuales. Por

Photo 24. "Our wings were cut", Rodrigo *Infante,* Chief Representative of *SalmonChile* in reference to the safeguards impose to Chilean salmon by the EU (El Mercurio February 5, 2005).

LA TERCERA, MARTES 8/02/2005

Gobierno estima que en mayo podría constituirse el panel arbitral ante la Organización Mundial de Comercio

Chile acude a la OMC y salmoneros estiman perjuicios por US$ 22 millones en la UE

Además de considerar la aplicación de salvaguardias como una medida injustificada, en el gobierno creen que el bloque europeo pudo adoptar otros resguardos menos nocivos para las importaciones del producto.

A. G.

El gobierno chileno recurrirá a la Organización Mundial de Comercio (OMC) para levantar la aplicación de salvaguardias que desde el domingo comenzó a regir en la Unión Europea (UE) para todas las importaciones de salmón que realiza dicho bloque, afectando con ello a la industria exportadora de Chile.

Las salvaguardias se determinaron a petición de productores de Irlanda y Escocia y considera un mecanismo de asignación de cuotas, más un precio mínimo a todos los envíos de salmón que lleguen al bloque.

"En última instancia, aquí va a haber muy probablemente un panel arbitral", dijo el director de Asuntos Multilaterales de la Dirección

"Muy probablemente a principios de mayo vamos a tener constituido el panel ante la OMC", precisó Ricardo Lagos Weber.

Económica de la Cancillería, Ricardo Lagos Weber, al explicar las acciones que seguirá el gobierno en la OMC para levantar tales medidas. Y precisó que el procedimiento se iniciará "a so a los países un techo a sus posibilidades de exportación del salmón.

A juicio del gobierno chileno se pudo, por ejemplo, haber usado un mecanismo menos dañino, como una sobretasa pareja, sin cuota. Así, el mercado define quién llega con sus envíos de salmón al bloque, sin importar su origen.

"Hasta yo puedo entender que hay que aplicar medidas provisionales a veces, para dar un respiro a algunas industrias domésticas. No es que (la salvaguardia) sea un pecado mortal. Pero la forma nos ha gol-

LA OTRA ALTERNATIVA

■ En virtud del acuerdo de libre comercio que nuestro país tiene con la UE, Chile podría aplicar compensaciones, como subir los aranceles en nuestro país a algún producto europeo para paliar el daño causado en el comercio bilateral. Pero para ello, debe haber pasado un período de 18 meses de la vigencia de la medida que da origen al conflicto. Sin acuerdo comercial el plazo sería aún más largo, de 36 meses.

AYER RICARDO LAGOS WEBER (a la izquierda) y Rodrigo Infante (a la derecha), analizaron por más de una hora las acciones que seguirán para hacer frente a las salvaguardias en la UE.

considera una primera etapa de consultas que debería iniciar Chile con la Comisión Europea, durante el cual las partes se dan la oportunidad de lograr un entendimiento.

A partir de la fecha en que se solicitó la consulta -que probablemente ocurra dentro de febrero-, Chile tiene un plazo de 60 días para pedir que se constituya el tribunal arbitral en la OMC, que da inicio al juicio.

La controversia la dirimen tres árbitros, que son nombrados de se ponen de acuerdo en los arbitros, éstos son nombrados por el director general de la OMC. El juicio dura 15 meses, incluido 9 meses de proceso, más una instancia de apelación.

Una de las ventajas que ve Chile en recurrir a la OMC es que se trata de un mecanismo amplio, al cual se pueden sumar otros países que se sientan perjudicados, lo que puede generar más presión.

Dada la cuota asignada en primera instancia a Chile, de 16.033 esta cifra no considera otros perjuicios aún incuantificables, como el crecimiento que pudo haber tenido ese mercado como destino para los salmones chilenos, dijo el gerente general de SalmonChile, Rodrigo Infante.

Photo 25. Announcement of the appealing to the Dispute Settlement Body of the WTO, Head of the Economic Office for Foreign Affairs and Chief Representative of *SalmonChile (*La Tercera, February 8, 2005).

Summary

This thesis explores a sociological approach towards understanding the contemporary process by which certain territorial relations are grouped under the notion of region. The research adopts an ethnographic perspective to reconstruct the *social life of regions* by focusing not only on the processes and activities that have transformed territorial units into objects of intervention, but also on the practices and sites that have turned regions into meaningful fields of action through which people carry out their life projects. This argument is sustained through research findings that recorded the spread of salmon farming in the *Patagonian Region of Aysén* in southern Chile.

Commercial fish farming in Chile began in the 1980s by the combination of techno-scientific approaches to seafood production and the marked bias towards export-based activities promoted by the neoliberal regime. Salmon farming expanded rapidly due to the increasing importance of trade networks that profited from the global demand of food commodities and the centrality given to regions as units of coordination between State agencies, trade networks, national or foreign capital and local livelihoods.

The thesis shows how the practices and sites related to the expansion of salmon farming challenge the social organization and territorial functions attributed to the contemporary Region of Aysén. It also provides a view in the opposite direction by exploring the ways in which the regionalization of certain development processes have facilitated the emergence of new activities producing globally demanded commodities. The thesis critically examines the wide scope of social practices that over time have contributed to create regional entities and transform them into techno-political objects of intervention. This process went together with academic and managerial trends in which the main object of development shifted to regional modes of economic functionality and territorial coordination of actors. Since the 1980s, this trend that I have called the *regionalization of development* has become more relevant by the rising flows of global commodities, the new geographies of food production and consumption and new governmental patterns of territorial allocation of resources. The politics of regional development proposes a path to globalization based on the spatial organization of activities and the selective support of actors geared towards the production of successful exportable commodities.

Despite the popularity of regional development among experts, this thesis argues that the direction and hegemony of territorial approaches are increasingly modulated through the multiplicity of social groups and organizations that are contesting, subverting or adapting some of its effects until they are transformed in meaningful parts of people's life-worlds. In this sense, the thesis shows that the form and the extent to which salmon farming relates to a politics of regional development is, indeed, controversial. In a techno-political approach to regional development actors do not struggle over one specific resource, but over a set of territorially based interventions, objects and projects that reflect differences in values, meanings and life-worlds. To understand this process differently, this thesis introduces the concept of a *regional field of action* in order to show a more complex and diverse landscape of activities, projects and livelihoods that are also contributing to make a region the home of settlers and workers. This living region unfolds daily within, around and outside the salmon farming industry but cannot be reduced to it. Salmon farming is already a part of the activities and

strategies of local people but, contrary to the self-sufficiency of hegemonic projects, they manifest the right of seeing and imagining things differently and, accordingly, of granting or refusing the right to others to intervene in certain domains of their everyday life.

The thesis is structured into nine chapters. Chapter One offers a general introduction that explains why salmon farming in Chilean Patagonia is a relevant theme for studying contemporary issues of regional development. The chapter also offers an overview of the three main theoretical concerns raised in the book. The first insight is the identification of the practices and processes by which *development has been redefined in regional terms* creating a territorially based object of intervention. The second introduces what I believe is a central argument to understand development interventions in the context of modernity; that most controversies are motivated by a conflicting understanding of the public and private domains in specific social situations. The third theoretical concern expresses the importance of situating the empirical *site* of research in *social practices* in order to stretch the narrow interpretations of social life and extend it to the perpetual coming into being of people and things.

Chapter Two is an ethnographic reflection on the conditions that have made this research possible. Fieldwork was intermittently conducted between October 2004 and March 2006. The main location was the coastal town of *Puerto Cisnes,* but the research was extended to multiple sites of interaction following some of the socio-technical networks as they became relevant during the research process. This multi-sited approach led me to conduct research in several locations in southern Chile as well as in Norway, Belgium and the Netherlands. The chapter describes the entire research process as an extended fieldwork which owes a great deal to my struggle of becoming a part of an epistemic community by learning, adapting and performing a set of accepted scientific practices. The chapter offers empirical descriptions that emphasize the inseparability between the process of ascription to a research group and the definition of the research objects. The main argument of Chapter Two reflects on a concern that cross-cuts the entire book: that an inescapable step in the research process is the specification of the means and aims by which we produce research objects, and that this procedure must be made explicit through a close examination of the epistemological and methodological grounds in which certain knowledge is forged.

Chapter Three is on the coming into being of the Region of Aysén. It sets the regional context where a great part of the processes of territorial redefinition of development studied in this research have occurred. The chapter gives us an historic overview of the processes and practices that have transformed the region into different objects of intervention for human activity across time, situating salmon farming only as one of the most recent, although meaningful for the study of contemporary practices of region-making.

Chapter Four introduces the history of the Patagonian coastal town of Puerto Cisnes. It reconstructs the constitutive events of the colonization process in the Region of Aysén since the 1940s to date through the life histories of a family of settlers. The narrative integrates the rise and fall of different regional economic booms with changing livelihood strategies and settlement organizing practices. The precarious village became a town through the material and symbolic contribution of its people in their striving to make a living and construct meaningful life projects.

Chapter Five exposes the long term history of different social agents who introduced salmonid fish in Chile. Given that salmon and trout are not native of the Chilean rivers, the chapter proposes an interpretation of salmon farming as embedded in a larger process aimed to introduce salmonid species in the southern hemisphere that dates back to the XIXth century. The chapter also discloses unknown cases of experimental fish farming conducted by local people from Puerto Cisnes that contributed to the early installation of fish farming in the Region. The cases add information about the local historicity and forms of appropriation that precede the commercial enterprise of salmon farming.

Chapter Six traces the constitution of the entrepreneurial and technological networks that interconnect the two largest farmed salmon producing countries. The chapter presents cases of entrepreneurial coordination between Norway and Chile that are central not only to understand the emergence of a global farmed salmon trade network, but also to the rise of the salmon farming entrepreneur. It shows how the characteristics of certain technological artifacts help to shape and define the salmon farming entrepreneurs in their relations with the State and the markets. The chapter identifies an emergent regional configuration in Chile, expressed in the metaphor of *Region Ten and a Half*, that has been shaped by off-region entrepreneurial networks that combine technology and capital to produce changes in the regional organization of production. My empirical interest in entrepreneurs also contributes towards understanding how performative aspects function in the process of identity formation and the constitution of capitalist projects.

Chapter Seven is an ethnographic description of fish farming practices from the workers' perspective. It offers a detailed account of the living and working conditions in critical sites of interaction for salmon farming production. The account focuses not only on the organization of production, but also on the practices that produce organization, understood as the techniques, procedures and activities that have helped to create hierarchies, functions and differentiated spaces of sociability. Chapter Seven explains the way workers transform labor relations into valuable adaptive and experiential knowledge for both the production of successful commodities and the effective economic colonization of the archipelago of Aysén.

Chapter Eight follows a case of an external trade dispute between Chilean salmon farming representatives and the European Commission. It provides empirical information to identify practices of lobbying and the brokerage role of the Chilean State to set networks that dissolve the boundaries between public and private interest. By elucidating some aspects of these politics of lobbying we may understand the contemporary forms by which the State favors a specific set of economic actors and relations over others. This chapter demonstrates that regional modes of production need the brokerage role of the State, channeled through lobbying networks that defend and sustain the trade exchange in international arenas.

Finally, Chapter Nine presents the main conclusions of this book. It states that the existence of export-based activities and trade networks in Chile is partly made possible by the creation of a *regional field of action* that facilitates the re-allocation of resources and the mobilization of people, capital and materials. The concept of regional field of action allows us to unite, from a practice-oriented perspective, all the outcomes that region-making processes generate independently if they are created by rulers, entrepreneurs,

workers or local people. Regional fields of action become an approach to study processes of development in a sociological sense by focusing on the effects that the formation of regions has for people's organization of everyday life and the constitution of meaningful life projects.

In sum, this thesis explores how different social groups create, dwell in, and transform a region. The narrative does not reduce the experience of constructing a region to vertical and hierarchical techno-political perspectives. It shows a multiplicity of sites that express local forms of regaining, contesting or adapting those regional fields and transforming them into places and relations that are meaningful for people's life-worlds. I believe this book broadens the perspective of regional development towards locally constructed forms of change that can contribute to make visible and build up new livelihood opportunities and to re-think a more inclusive perspective that values the experience of regional dwellers.

Resumen

Esta tesis explora un enfoque sociológico para comprender los procesos contemporáneos mediante los cuáles ciertas relaciones territoriales han sido agrupadas bajo la noción de región. La investigación adopta una perspectiva etnográfica para reconstruir la *vida social de las regiones* al enfocarse no sólo en los procesos y actividades que han transformado las unidades territoriales en objetos de intervención, sino también en aquellas prácticas y sitios que han convertido a las regiones en campos de acción significativos a través de los cuales las personas conducen sus proyectos de vida. Este argumento es sustentado a partir de resultados de investigación que registran la expansión de la salmonicultura en la *Patagónica Región de Aysén* en el sur austral de Chile.

La salmonicultura comercial en Chile comienza en la década de 1980 por una combinación de enfoques tecno-científicos aplicados a la producción de productos del mar y un marcado sesgo hacia actividades exportadoras impulsado por un régimen económico neoliberal. La salmonicultura se expandió rápidamente debido a la creciente importancia de las redes de comercio que se benefician de una demanda global de alimentos, así como también por la centralidad dada a las regiones como unidades de coordinación entre las agencias del Estado, las redes comerciales, el capital nacional o extranjero y los modos de vida locales.

Esta tesis demuestra cómo las prácticas y sitios relacionados con la expansión de la salmonicultura desafía la organización social y las funciones territoriales atribuidas a la actual Región de Aysén. En este sentido, provee una visión en el sentido contrario mediante la exploración de los modos mediante los cuales la regionalización de ciertos procesos de desarrollo han facilitado el surgimiento de nuevas actividades productoras de mercancías demandadas globalmente. La tesis examina de manera crítica un amplio rango de prácticas sociales que a través del tiempo han contribuido a crear entidades regionales transformándolas luego en objetos de intervención tecno-políticos. Este proceso fue acompañado con tendencias académicas y administrativas en las que el objeto del desarrollo cambió hacia modos regionales de funcionalidad económica y coordinación territorial de actores. Desde la década de 1980, esta tendencia, que he denominado la regionalización del desarrollo, ha llegado a ser más relevante por el creciente flujo de mercancías globales, las nuevas geografías de producción y consumo de alimentos y nuevos patrones de locación de recursos. La política de desarrollo regional propone un sendero a la globalización basado en la organización espacial de las actividades y el apoyo selectivo de actores orientados hacia la producción de mercancías exportables exitosas.

A pesar de la popularidad de la perspectiva del desarrollo regional entre los expertos, esta tesis argumenta que la dirección y hegemonía de los enfoques territoriales son moduladas de manera creciente por la multiplicidad de grupos sociales y organizaciones que contestan, subvierten o adaptan algunos de sus efectos hasta transformarlos en partes significativas de sus mundos de vida. En este sentido, esta tesis muestra que la forma y la extensión en que la salmonicultura se relaciona con una política de desarrollo regional es, de hecho, controversial. En un enfoque tecno-político del desarrollo regional, los actores no luchan por un recurso específico sino sobre un conjunto de intervenciones territoriales, objetos y proyectos que reflejan diferencias en valores, significados y mundos de vida. Ésta tesis introduce el concepto de *campo regional de acción*

con el propósito de mostrar un paisaje de actividades, proyectos y modos de vida mucho más diverso y complejo que el enunciado por enfoques tecnocráticos pero que también están contribuyendo a hacer de una región el hogar de colonos y trabajadores. Esta región viviente se despliega diariamente dentro, alrededor y afuera de la industria salmonera y sin embargo no puede ser reducida a su influencia. La salmonicultura ya es parte de las actividades y estrategias de la gente local pero, contrariamente a proyectos autosuficientes y hegemónicos, las personas manifiestan el derecho a ver e imaginar las cosas de una manera diferente y, correspondientemente, de aceptar o rechazar la intervención de otros en ciertos dominios de su vida cotidiana.

Esta tesis está estructurada en nueve capítulos. El Capítulo Uno ofrece una introducción general que explica por qué la salmonicultura en la Patagonia Chilena es un tema relevante para estudiar aspectos actuales del desarrollo regional. El capítulo también ofrece una visión panorámica de los tres aspectos teóricos centrales propuestos en el libro. El primero es la identificación de las prácticas y procesos mediante las cuáles el *desarrollo ha sido redefinido en términos regionales* creando un objeto de intervención en base a un territorio. El segundo aspecto introduce lo que creo es un argumento central para entender las intervenciones para el desarrollo en el contexto de la modernidad; que la mayoría de las controversias son motivadas por un entendimiento conflictivo de los dominios público y privado en situaciones sociales específicas. El tercer aspecto teórico manifiesta la importancia de ubicar en las *prácticas sociales* el *sitio* empírico de la investigación social, ello con el objetivo de ampliar interpretaciones reducidas de la vida social y extenderlas en el perpetuo llegar a ser de personas y cosas.

El Capítulo Dos es una reflexión etnográfica sobre las condiciones que han hecho posible esta investigación. El trabajo de campo fue conducido de manera intermitente entre octubre de 2004 y marzo de 2006. La localidad principal fue el pueblo costero de *Puerto Cisnes*, sin embargo la investigación se extendió por múltiples sitios de interacción siguiendo algunas de las redes socio-técnicas que llegaron a ser relevantes durante el proceso. El enfoque multi-situado me llevó a realizar investigación en varias locaciones del sur austral de Chile, Noruega. Bélgica y Holanda. El capítulo describe el proceso completo de investigación como un trabajo de campo extendido que debe gran parte de su desarrollo a mi lucha por llegar a ser parte de una comunidad epistémica a través del aprendizaje, adaptación y desempeño de un conjunto aceptado de prácticas científicas. El capítulo ofrece descripciones empíricas que enfatizan la inseparabilidad entre el proceso de adscripción a un grupo académico y la definición del objeto de investigación. El principal argumento del Capítulo Dos es una reflexión que atraviesa todo el libro: Que un paso ineludible en el proceso de investigación es la especificación de los medios y objetivos mediante los cuales producimos objetos de investigación, y que este procedimiento debe ser explicitado a través de un examen detallado de las bases epistemológicas y metodológicas sobre el que cierto conocimiento es forjado.

El Capítulo Tres es sobre el devenir, el llegar a ser de la Región de Aysén. Define el contexto regional donde la mayor parte de los procesos de redefinición territorial del desarrollo estudiados en esta investigación han ocurrido. El capítulo nos entrega una visión histórica de los procesos y prácticas que han transformado a la región en diferentes objetos de intervención para la actividad humana a lo largo del tiempo, situando a la salmonicultura sólo como la más reciente, aunque significativa para el estudio de las prácticas contemporáneas que construyen región.

El Capítulo Cuatro nos introduce en la historia del pueblo costero Patagónico de Puerto Cisnes. Se reconstruyen los eventos constitutivos del proceso de colonización de la Región de Aysén desde la década de 1940 a la fecha a través de las historias de vida de una familia de colonos. La narrativa integra el auge y caída de diferentes booms económicos regionales con las cambiantes estrategias de vida y prácticas organizativas del asentamiento costero. El villorrio precario se convirtió en pueblo a través de la contribución material y simbólica de sus habitantes en una lucha constante por asegurar su subsistencia y construir proyectos de vida significativos.

Chapter Five exposes the long term history of different social agents who introduced salmonid fish in Chile. Given that salmon and trout are not native of the Chilean rivers, the chapter proposes an interpretation of salmon farming as embedded in a larger process aimed to introduce salmonid species in the southern hemisphere that dates back to the XIXth century. The chapter also discloses unknown cases of experimental fish farming conducted by local people from Puerto Cisnes that contributed to the early installation of fish farming in the Region. The cases add information about the local historicity and forms of appropriation that precede the commercial enterprise of salmon farming.

El Capítulo Cinco expone la historia de largo plazo a través de la cuál diferentes agentes sociales introdujeron peces salmonídeos en Chile. Dado que el salmón y la trucha no son nativos de los ríos chilenos, el capítulo propone una interpretación de la salmonicultura como una actividad enraizada en un largo proceso orientado a introducir los salmónidos en el hemisferio sur y que tiene una data de registro desde la segunda mitad del siglo XIX. El capítulo también devela dos casos desconocidos de piscicultura experimental conducida por la gente de Puerto Cisnes lo que contribuyó a la temprana instalación de la salmonicultura en la región. El caso aporta información acerca de la historicidad local y las formas de apropiación que precede a la fase comercial de la salmonicultura chilena.

El Capítulo Seis reconstruye la formación de algunas de las redes empresariales y tecnológicas que interconectan a los dos mayores países productores mundiales de salmón cultivado. El capítulo presenta casos de coordinación empresarial entre Noruega y Chile que son centrales no sólo para comprender el surgimiento de una red comercial global de salmón de cultivo sino también el auge de los empresarios salmoneros. Se demuestra que las características de ciertos artefactos tecnológicos han ayudado a formar y definir a los empresarios salmoneros en su relación con los Estados y los mercados. El capítulo además identifica una configuración regional emergente que ha sido modelada por la acción de redes empresariales extra-regionales que en combinación de tecnología y capital han producido cambios fundamentales en la organización regional de la producción. El interés empírico en los empresarios también se orienta hacia la comprensión de cómo los aspectos de acción y desempeño (performance) son generativos de los procesos de formación de identidad y la constitución de proyectos capitalistas.

El Capítulo Siete es una descripción etnográfica de las prácticas piscícolas desde la perspectiva de los trabajadores. Se ofrece un relato detallado las condiciones de vida y laborales en sitios de interacción críticos para la producción salmonera. La narrativa no solo se centra en la organización de la producción sino también las prácticas que producen organización, entendido esto último como las técnicas, procedimientos y

actividades que han ayudado a crear jerarquías, funciones y espacios diferenciados de sociabilidad. El Capítulo Siete explica la forma en que los trabajadores transforman las relaciones laborales en valioso conocimiento adaptativo y experimental lo que ha contribuido a la producción de exitosas mercancías y la efectiva colonización económica de los archipiélagos de Aysén.

Chapter Eight follows a case of an external trade dispute between Chilean salmon farming representatives and the European Commission. It provides empirical information to identify practices of lobbying and the brokerage role of the Chilean State to set networks that dissolve the boundaries between public and private interest. By elucidating some aspects of these politics of lobbying we may understand the contemporary forms by which the State favors a specific set of economic actors and relations over others. This chapter demonstrates that regional modes of production need the brokerage role of the State, channeled through lobbying networks that defend and sustain the trade exchange in international arenas.

El Capítulo Ocho presenta un caso de disputa de comercio exterior entre los representantes salmoneros chilenos y la Comisión Europea. Se aporta información empírica que identificar las prácticas de lobby y el rol de intermediación del Estado Chileno a través del establecimiento de redes que disuelven los límites entre el interés público y privado.

Finally, Chapter Nine presents the main conclusions of this book. It states that the existence of export-based activities and trade networks in Chile is partly made possible by the creation of a *regional field of action* that facilitates the re-allocation of resources and the mobilization of people, capital and materials. The concept of regional field of action allows us to unite, from a practice-oriented perspective, all the outcomes that region-making processes generate independently if they are created by rulers, entrepreneurs, workers or local people. Regional fields of action become an approach to study processes of development in a sociological sense by focusing on the effects that the formation of regions has for people's organization of everyday life and the constitution of meaningful life projects.

In sum, this thesis explores how different social groups create, dwell in, and transform a region. The narrative does not reduce the experience of constructing a region to vertical and hierarchical techno-political perspectives. It shows a multiplicity of sites that express local forms of regaining, contesting or adapting those regional fields and transforming them into places and relations that are meaningful for people's life-worlds. I believe this book broadens the perspective of regional development towards locally constructed forms of change that can contribute to make visible and build up new livelihood opportunities and to re-think a more inclusive perspective that values the experience of regional dwellers.

Samenvatting

Dit proefschrift zoekt naar een sociologische benadering om het tegenwoordige proces van de bundeling van bepaalde territoriale relaties onder het begrip regio te begrijpen. Het onderzoek hanteert een etnografisch perspectief om *the social life of regions* te reconstrueren door zich niet alleen te richten op de processen en activiteiten die territoriale eenheden hebben getransformeerd tot interventie objecten, maar ook op de praktijken en plaatsen die regio's tot betekenisvolle *fields of action* (actievelden) maken waarin mensen hun levensprojecten uitvoeren. Deze aanpak wordt ondersteund door onderzoeksbevindingen die de verspreiding van de zalmkwekerij in de Regio Aysén in het Patagonië van zuidelijk Chili vastleggen.

De commerciële viskwekerij begon in Chili in de jaren 1980 met een combinatie van wetenschappelijke benaderingen van de productie van voedsel uit zee en een uitgesproken voorkeur voor exportgerichte activiteiten van het neoliberale regime. De zalmkwekerij verspreidde zich snel dankzij het toenemend belang van handelsnetwerken die profiteerden van de wereldwijde vraag naar voedselproducten en de centrale rol die werd toegewezen aan regio's in de coördinatie van staatsinstellingen, handelsnetwerken, binnenlands en buitenlands kapitaal, en lokale livelihoods.

Het proefschrift toont aan hoe praktijken en plaatsen die met de uitbreiding van de zalmkwekerij te maken hebben een uitdaging vormen voor de sociale organisatie en territoriale functies die worden toegeschreven aan de huidige Regio Aysén. Het boek werpt ook blik in tegenovergestelde richting door te onderzoeken hoe de regionalisering van bepaalde ontwikkelingsprocessen heeft bijgedragen tot de opkomst van de productie van handelswaar voor de wereldmarkt. Het is een kritische studie van de verscheidenheid aan sociale praktijken die door de jaren hebben bijgedragen aan de vorming van regionale eenheden en deze hebben hervormd tot technisch-politieke interventie objecten. Dit proces ging gepaard met academische en management tendensen waarbij het hoofddoel van ontwikkeling verschoof naar regionale economische functionaliteiten en een territoriale coördinatie van actoren. Sinds de jaren '80 is deze trend, die ik de *regionalisering van ontwikkeling* heb genoemd, belangrijker geworden vanwege de toenemende stroom goederen, de nieuwe geografieën van voedselproductie en consumptie en nieuwe bestuurlijke patronen van territoriale toewijzing van middelen. De politiek van regionale ontwikkeling stelt een weg voor naar globalisering die is gebaseerd op de ruimtelijke organisatie van activiteiten en de selectieve steun van actoren gericht op de productie van succesvolle exportgoederen.

In weerwil van de populariteit van regionale ontwikkeling onder experts betoogt deze studie dat de richting en hegemonie van territoriale benaderingen in toenemende mate wordt gevormd door de veelvormigheid van sociale groepen en organisaties die sommige effecten ervan betwisten, ondermijnen of overnemen om ze te herscheppen tot betekenisvolle onderdelen van het leven van de mensen. Zo laat deze dissertatie zien dat de vorm en de mate waarin de zalmkwekerij verband houdt met een regionale ontwikkelingspolitiek controversieel kunnen zijn. In een technisch-politieke benadering van regionale ontwikkeling strijden actoren niet om een bepaalde hulpbron, maar om een geheel van territoriale interventies, objecten en projecten die verschillen in waarden, betekenissen en leefwerelden weerspiegelen. Om dit geheel op een nieuwe manier te begrijpen voert deze studie het begrip *regionaal actieveld* in om een meer complex en divers

landschap te kunnen schetsen van alle activiteiten, projecten en livelihoods die mede ervoor zorgen dat de regio het 'thuis' wordt van de bewoners en werknemers. Deze levende regio krijgt dagelijks vorm in de zalmindustrie, maar kan niet daartoe worden gereduceerd. Zalmkwekerij vormt een onderdeel van de strategieën van de lokale bevolking maar, in tegenstelling tot de zelfgenoegzaamheid van hegemonische projecten, geven zij ook het recht om zelf zaken anders te zien en voor te stellen en bijgevolg geven zij het recht aan anderen om zaken te weigeren of in te grijpen in bepaalde domeinen van het alledaagse bestaan.

Het proefschrift is ingedeeld in negen hoofdstukken. Hoofdstuk 1 biedt een algemene inleiding en verklaart waarom de zalmkwekerij in Chileens Patagonië een relevant onderwerp is om de tegenwoordige regionale ontwikkeling te bestuderen. Het geeft tevens een overzicht van de drie voornaamste theoretische inzichten die in dit boek worden behandeld. Het eerste is de identificatie van de praktijken en processen waardoor *ontwikkeling wordt geherdefinieerd in regionale termen*, waarmee een territoriaal interventie object wordt gecreëerd. Het tweede introduceert een naar mijn mening cruciaal argument om ontwikkelingsinterventie te begrijpen in de context van moderniteit, namelijk dat de meeste controversies worden gemotiveerd door een tegengestelde opvatting over wat publieke en privé domeinen zijn in bepaalde sociale situaties. Het derde theoretisch inzicht geeft het belang aan van het situeren van de empirische onderzoekslocatie in *sociale praktijken* om enge interpretaties van het sociale leven te verruimen tot een voortdurend 'worden' (*coming into being*) van mensen en dingen.

Hoofdstuk 2 is een etnografische weergave van de omstandigheden die dit onderzoek mogelijk maakten. Het veldwerk werd met onderbrekingen uitgevoerd tussen oktober 2004 en maart 2006. De belangrijkste locatie was de kustplaats Puerto Cisnes, maar het onderzoek omvatte ook de diverse interacties van de technisch-sociale netwerken die gedurende het onderzoeksproces van belang bleken te zijn. Deze multi-sited aanpak bracht mij naar diverse plaatsen in zuidelijk Chili zowel als in Noorwegen, België en Nederland. Het hoofdstuk beschrijft het hele onderzoeksproces als een uitgebreid veldwerk dat veel te danken heeft aan mijn inspanning om deel te worden van een epistemische gemeenschap door een geheel van geaccepteerde wetenschappelijke praktijken aan te leren, me eigen te maken en uit te voeren. Het hoofdstuk geeft empirische beschrijvingen die de onlosmakelijke samenhang benadrukken van mijn lidmaatschap van een onderzoeksgroep en de definitie van de onderzoeksobjecten. Het hoofdargument van Hoofdstuk 2 loopt door het hele boek heen, namelijk dat een onontkoombare stap in het onderzoeksproces de bepaling is van de betekenis en het doel van de vorming van onderzoeksobjecten en dat deze procedure expliciet gemaakt moet worden door de nauwgezette bestudering van de epistemologische en methodologische gronden waarop kennis wordt gevormd.

Hoofdstuk 3 gaat over het ontstaan van de Regio Aysén. Het geeft de regionale context waarin veel van de territoriale herdefiniëring van ontwikkeling heeft plaatsgevonden. Het hoofdstuk biedt ons een overzicht van de processen en praktijken die de regio transformeerden in verschillende interventie objecten door de tijd heen, waarbij de zalmkwekerij duidelijk als één van de meest recente maar ook veelbetekenende praktijken voor de studie van recente regiovorming naar voren komt.

Hoofdstuk 4 introduceert de geschiedenis van de Patagonische kustplaats Puerto Cisnes. Het reconstrueert de gebeurtenissen die het kolonisatieproces vormgaven in de Regio Aysén sinds 1940 tot heden door middel van een beschrijving van de levensgeschiedenis

van een settlersfamilie. Hun verhaal legt het verband tussen de regionale economische hoogte- en dieptepunten en de veranderende livelihood strategieën en de organisatie van hun vestiging. Het beginnende dorp groeide uit tot een regionale stad door de materiële en symbolische bijdragen van haar bevolking in hun streven naar een zinvol bestaan.

Hoofdstuk 5 laat de lange termijn geschiedenis zien van de diverse sociale *agents* die de zalmkwekerij in Chili introduceerden. Gegeven dat zalm en forel niet inheems zijn in de Chileense wateren, stelt dit hoofdstuk voor de zalmkwekerij te beschouwen als ingebed in een wijder proces dat teruggaat tot de 19de eeuw en tot doel had zalmsoorten te introduceren in het zuidelijk halfrond. Het hoofdstuk beschrijft ook de tot nu toe niet verder bekende gevallen van experimentele viskwekerij door de lokale bevolking van Puerto Cisnes die hebben bijgedragen aan de vroege vestiging van de viscultuur in de Regio. Deze cases geven meer informatie over de lokale historiciteit en manieren waarop men zich de viskwekerij eigen maakte voorafgaand aan de commerciële visindustrie.

Hoofdstuk 6 volgt de vorming van ondernemers en technologische netwerken die de twee grootste zalmproducerende landen met elkaar verbinden. Noorwegen en Chili zijn niet alleen van cruciale betekenis voor ons begrip van het ontstaan van een wereldwijd handelsnetwerk van gekweekte zalm, maar ook voor de opkomst van de zalmondernemer. Het hoofdstuk laat zien hoe de kenmerken van bepaalde technologische artefacten helpen in de vorming en definiëring van zalmondernemers in hun relaties met de Staat en met markten. Ook wordt de opkomende regionale configuratie in Chili beschreven van wat wordt aangeduid als de *Regio Tien-en-een-Half*, die wordt gevormd door buiten-regionale ondernemersnetwerken die technologie en kapitaal combineren om verandering te bewerkstelligen in de regionale organisatie van de productie. Mijn empirische belangstelling voor ondernemers draagt ook bij tot een beter begrip van de bijdrage van performatieve aspecten aan het proces van identiteitsvorming en de ontwikkeling van kapitalistische projecten.

Hoofdstuk 7 is een etnografische beschrijving van de viskwekerij vanuit het perspectief van de betrokken werknemers. Het geeft een gedetailleerd verslag van de leef- en werkomstandigheden op de centrale plaatsen waar de interactie in de productie van gekweekte zalm plaatsvindt. Het accent ligt hierbij niet alleen op de organisatie van de productie, maar ook op de productie van de organisatie, in de zin van de technieken, procedures en activiteiten die hebben bijgedragen tot de vorming van hiërarchieën, functies en gedifferentieerde ruimten van sociabiliteit. Het hoofdstuk verklaart ten slotte de wijze waarop de werknemers in de zalmkwekerij hun werkrelaties transformeren tot zinvolle toepassings- en ervaringskennis voor zowel de productie van succesvolle handelswaar als de effectieve economische kolonisering van de archipel van Aysén.

Hoofdstuk 8 volgt de case van een extern handelsdispuut tussen Chileense vertegenwoordigers van de zalmkwekerij en de Europese Commissie. Het verschaft empirische informatie over de lobby praktijken en middelaarsrol van de Chileense Staat in de vorming van netwerken die de grenzen doen vervagen tussen publiek en privé belang. Door enkele aspecten van deze lobby politiek te belichten kunnen wij de huidige voorkeur van de Staat voor een bepaald soort economische actoren en relaties beter begrijpen. Dit hoofdstuk toont aan dat regionale productiewijzen de bemiddelende rol van de Staat nodig hebben door lobby netwerken die de handelsuitwisseling verdedigen en ondersteunen in internationale arenas.

Hoofdstuk 9 ten slotte presenteert de voornaamste conclusies van dit boek. Het bestaan van op export gebaseerde activiteiten en handelsnetwerken in Chili wordt deels mogelijk gemaakt door de vorming van een *regionaal actieveld* voor de re-allocatie van bronnen en de mobilisering van mensen, kapitaal en materiaal. Het begrip regionaal actieveld brengt vanuit een praktijkgericht perspectief alle uitkomsten bijeen die onafhankelijk van elkaar worden gegenereerd door leiders, ondernemers, werknemers in de zalmkwekerij en gewone mensen. Regionale actievelden vormen zo de kern van de bestudering van ontwikkelingspatronen in sociologische zin door ons te richten op het effect dat de vorming van regio's heeft op de organisatie van het dagelijks leven en een zinvolle invulling die mensen er aan geven.

Samenvattend onderzoekt dit proefschrift hoe verschillende sociale groepen een regio vormgeven, erin leven en er verandering in aanbrengen. Onze narratieve weergave van deze processen en praktijken reduceert regiovorming niet tot verticale en hiërarchische technisch-politieke processen. Het toont een veelheid van *sites* die de lokale manieren weerspiegelen van de herovering, bestrijding en aanpassing van deze regionale velden tot plaatsen en relaties die betekenis hebben voor de leefwereld van de mensen. Ik ben van mening dat dit boek ons perspectief op regionale ontwikkeling verbreedt door aandacht te schenken aan lokaal geconstrueerde vormen van verandering die kunnen bijdragen tot het zichtbaar maken van nieuwe livelihood kansen en tot een heroverweging van een meer omvattend perspectief dat de ervaring van de bewoners van de regio recht doet.

Curriculum Vitae

Gustavo Blanco Wells was born in Santiago, Chile on 22 September 1971. He graduated in Agronomy in 1998 from Universidad Austral of Chile. After his graduation he started working as a Teacher Assistant in the same university in the field of Rural Sociology and took part in different rural development academic projects. In 2002 he got an Alfa grant from the European Union to study a Master of Arts in Studies of Society, Science and Technology at the Roskilde University in Denmark. During his Master Programme he did a research internship in the Department of Philosophy of Sciences of the Basque Country University, Spain. He obtained his M.A. in 2003. The same year he was hired as lecturer at the Institute of Social Sciences of Universidad Austral of Chile, position he currently holds. In 2004 he was granted with a scholarship from the Chilean Ministry of Education to start a PhD in Rural Development Sociology at Wageningen University in the Netherlands. The research process was conducted in different areas of the Chilean Patagonia, Belgium and Norway. In the Scandinavian country he carried out a research stay hosted by the Center of Rural Research of the Norwegian University of Science and Technology in Trondheim. He has presented his research work at several international conferences and has been published in book chapters and peer review journals of Latin America.

Currently, he teaches Development Sociology and Sociology of Science and Technology, and is part of the academic staff of two Master Programmes at Universidad Austral; the Master of Rural Development and the International Joint Master of Science on Regional Development Planning and Management -SPRING programme - of the University of Dortmund, Germany.

Completed Training and Supervision Plan G. Blanco Wells

Description	Department/Institute	Month/year	Credits
I. General			
- CERES orientation programme	CERES, Utrecht	April-May 2004	5
- CERES presentation tutorials	CERES, Utrecht	May 2004	5,5
II. Research Methods and Techniques and Domain Specific Theories			
- CERES Summer School 2004: "Exploring the Future of Resource Dynamics".	CIDIN - University of Nijmegen	June 2004	2
- CERES Summer School 2005 "Governance for Social Transformations"	Institute of Social Studies	June 2005	2
- Seminar of the series IPAR - Integrated Planning Against Risk	Centre for Development Studies, University of Wales & RDS, WUR	June 2004	1
- Advanced Research Seminars	RDS - WUR	2004-2007	5
III. Academic Skills			
- Research internship in Norway	Centre for Rural Research of the Norwegian University of Science and Technology	September 2005	5
- Convener of Working Group 21: Public policy and rural development	ALASRU Conference, FLACSO, Quito, Ecuador	November 2006	1
- Convener Slippery objects in marine research: Approaches from Science and Technology Studies.	MARE Conference, Amsterdam	July 2007	1
- Convener of Working group 18: 'Europe and Beyond: Methodological Challenges towards a Rural Sociology of the Global?	ESRS Congress, Wageningen	August 2007	1
IV. Presentations of research results			
- The Chilean aquaculture model: an overview of its development, expansion and conflicts	SLAS Conference, Leiden University	April 2004	3
- The Chilean aquaculture model: expansion and conflicts	IRSA World Congress, Norwegian University of Science and Technology, Trondheim	August 2004	3
- Re-interpreting Technological Trajectories: Exploring the role of entrepreneurial action in the formation of Norwegian and Chilean Salmon Farming	CERES Summer School, WUR	June 2006	3
- Re-interpreting Technological Trajectories: Lessons from the Norwegian and Chilean Salmon Farming	SASE Conference, University of Trier, Germany	July 2006	3
- La reinvención de la Patagonia: gente, mitos, mercancías y la continua apropiación del territorio	ICA Conference, University of Sevilla, Spain	July 2006	3
- On Creativity, Expectations and the formation of Value: A perspective on the Chilean aquaculture industry	EASST Conference, University of Lausanne, Switzerland	August 2006	3
- Alianzas Público-Privadas y otras formas de organización en el desarrollo rural chileno ¿Hacia una redistribución de la acción política?	ALASRU Conference, FLACSO, Quito, Ecuador	November 2006	3
- Salmon go to Chile: The technology of domestication and the domestication of technology	MARE Conference, Amsterdam	July 2007	3
- Lobbying networks: Methodological challenges in the (de)construction of a trade safeguard case	ESRS Congress, Wageningen	August 2007	3
Total			**55,5**