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Restoring Hemispheric Relationality: Connecting Mapuche and California Native Homelands Through the Stories of Wheat and Pine

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Restoring Hemispheric Relationality:
Connecting Mapuche and California Native Homelands Through the Stories of Wheat and Pine

By

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Cinthya Ammerman
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Native American Studies

Restoring Hemispheric Relationality: Connecting Mapuche and California Native Homelands Through the Stories of Wheat and Pine

Abstract

This dissertation shows how the symmetrical landscapes of Mapuche and California Native homelands became further interconnected through cultivar exchange in the 19th century. Grounded in Native American Studies theory and methodology, I follow the stories of wheat (*Triticum compactum*) and pine (*Pinus radiata*) and the links they have created between both regions. In the nineteenth century Chile experienced a boom in wheat exports to meet the demand of California gold rush populations, fueling the settlement of California and providing the seeds for the state's budding wheat economy. California's colonization and transition into large-scale agriculture in the 1860s became a model for the settlement of Mapuche territory. Eager to expand their agricultural frontier and to create a "Chilean California," Chilean settlers invaded Mapuche territory through a process of massive deforestation. This land was then "reforested" with the California-native *radiata* pine. Based on original archival research and oral histories, I show how the centuries-long effort to replace Chile's temperate rainforest with pine and other monoculture is the direct result of historical exchanges with California. This interdisciplinary and international study reveals the origin of Chile's current environmental conflict, as well as future sites of collaboration among Indigenous peoples of both regions in response to extractivism and climate change. This research will also indigenize existing work on the Chile-California connection and will deepen important discourses about hemispheric approaches to Native American Studies.

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“We are part of an old story and involved in it are migrations of winds, of ocean currents, of seeds, songs, and generations of nations.”

(Joy Harjo 2000, 14)

Introduction

As noted by a Mapuche *werkén* (messenger), "every time a *nütram* or a part of our history is recounted, we come to understand that the Territory expands much more than we realize, and is not limited to the current space of our communities ..." (fieldnotes 2013). A *nütram* means "a conversation, a historical narrative," in the Mapuche language. It is a discursive genre that can spur historical analysis with the possibility of recreating collective identity and territory (Cañuqueo, 2004). The research presented here is a trans-continental *nütram* of sorts, a historical narrative that expands our understanding of Native land beyond colonizer categories of nation-states by following the stories of plants across the hemisphere. This dissertation expands on the connections between Mapuche and California Native homelands that were forged through interconnected processes of colonization, specifically, through the Spanish introduction of wheat and the Chilean introduction of the California *radiata* pine. Through the cultivation of these plants, colonizers simplified the landscape, creating profound ecological changes that disrupted the previously-established relationships of consent and reciprocity Indigenous peoples had with their homelands. These changes have impacted their cultures, well-being, self-determination, and has made them more vulnerable to the effects of climate system changes.

Indigenous climate vulnerability cannot be analyzed without acknowledging the history and current practices of colonialism and capitalism on ancestral homelands (Whyte 2017). The dominant argument of the "Anthropocene" maintains that human-induced climate change began with the Industrial Revolution, however, Moore (2017) argues, this excludes the earlier history of political economy that began with the arrival of Columbus in the Americas. He asks, "Are we really living in the Anthropocene – the 'age of man' – with its Eurocentric and techno-

determinist vistas? Or are we living in the Capitalocene – the 'age of capital' – the historical era shaped by the endless accumulation of capital?" (Moore 2017, 3). Similarly, Mitchell (2015) argues that "the Anthropocene is not the product of 'humanity', but rather particular segments of it." A historical analysis provides insight into the origins of our climate, or system change[1] crisis, and how we can heal from this colonial legacy of capital accumulation at the expense of life.

For understanding how the past interpolates the present, Aymara feminist scholars Julieta Paredes and Adriana Gúzman (2014) share knowledge from their elders—to walk looking at the past because the past is in front of you, it's what you can see, and the future is behind you, you don't know it and you can't see it. By "looking with eyes that can see other times we can recover the time of our elders and learn from their collective struggles, it's a time that isn't gone but circulates, so that we can construct our own time of hope and collective well-being." (26). With this in mind, unraveling the intertwined histories of colonization of Wallmapu and California Native homelands may serve as a roadmap for forging future collaborations for healing and restoration. The equitable integration of Indigenous knowledge systems, across the hemisphere and across the disciplines, is fundamental to climate change mitigation and adaptation.

[1] Haraway (2015) argues that Beyond climate change, we are dealing with "system change", extractivist industries, ecosystem simplification, genocide and ecocide, burdens of toxins, "in systemically linked patterns that threaten major system collapse after major system collapse after major system collapse…" (160)

Background

The centuries-long effort to replace Chile's biologically diverse temperate rainforest with the California-native *radiata* pine and other monocultures is in large part the direct result of exchanges with California that began during the Gold Rush. During the mid 1800s, Chile experienced a boom in wheat exports to meet the demands of California Gold Rush populations. Settlers on the frontier of Mapuche territory burned vast swaths of native forest to create the climate and space for wheat crops. Massive deforestation profoundly impacted the ecosystem of southern Chile as well as the land tenure of the frontier, helping to shape the formation of large estates and expel Mapuche and peasant farmers from the land (Kublock 2014.). Deforestation was a vital means for the Chilean government to settle and establish governance over Mapuche territory and subsequently, "reforest" the land with *radiata* pine displaced[2] from Northern California.

From 1861 to 1883, around the same time as the California Native genocide of 1850-1880, the Chilean state carried out a violent campaign to occupy Mapuche territory. A newspaper in 1866 echoed the Chilean elite's hope that the land would be conquered and cleared of native forests and its Mapuche inhabitants: "…the territory between the Bío-Bío and Imperial rivers will gradually be conquered: the industries, the population, the settlements will flourish, Araucanía will disappear with time and in its place a new California will rise." (in Melillo 2015). The colonization of California and its transition into large-scale agriculture in the 1860s was a model for the colonization of La Araucanía.

[2] I borrow the term from Melillo (2015), who descibres displacements as "instances in which an organism, an object or a person moves from one place to another in a single trip or in a few journeys." (6). He uses to term to describe the export of *radiata* pine to Chile.

The monoculture of pine intensified during Chile's neoliberal 'makeover' introduced by the Pinochet dictatorship (1973-1990). The "green rush" of pine on ancestral Mapuche homelands has created a flammable landscape that acts synergistically with climate/ system change to create longer fire seasons and larger wildfires (Gonzáles et al. 2018). Communities surrounded by *radiata* monoculture are some of the most vulnerable to the effects of climate/ system change in Chile. In response to neoliberal development, supranational movements for autonomy and self-determination have emerged to create spaces of Indigenous autonomy, territorial and cultural control, and self-government. There is a growing body of literature regarding Mapuche movements for self-determination and their relation to local elites, timber plantations, and the Chilean state (Kublock 2014; Richards 2013; Tricot 2013; Haughney 2006). However, little attention has been paid to how the experiences of Mapuche peoples are historically and inextricably tied to the experiences of other Indigenous communities throughout the Americas, and how hemispheric collaborations can strengthen movements for self-determination.

Research Objectives

Following Native Studies theory and methodology, my dissertation looks to plants as archives and teachers. As Jiménez et al. (2008) have noted, both Chile and California have been shaped by the invasion of a significant number of alien plants of which they share 491 endemic and invasive species. These plants reveal a shared history of immigration, settlement, and colonization that "was similar in the two regions in terms of magnitude and origin until the mid-1800s" (Ibid.). I follow the stories of wheat (Triticum compactum) and pine (Pinus radiata) and the uncanny economic links they forged between Mapuche and California Indians. Drawing from

a significant body of literature connecting Chile's wheat boom to the California's Gold Rush, this study examines the impact that these historical exchanges have had on California Indian and Mapuche territorial sovereignty. Leaning on the theoretical work of scholars such as Edward Melillo (2015), James C. Scott (1998, 2017), Kyle Powys Whyte (2017), and Robin Wall Kimmerer (2011, 2013), this hemispheric and interdisciplinary project will contribute to key conversations on the origins of our current crisis climate/ system change, and will deepen important discourses about hemispheric approaches to Native American Studies. In contrast to previous studies on the "Mapuche conflict" with the Chilean nation-state, my work will address the interrelated processes of colonization that simultaneously enclosed and privatized California Indian and Mapuche territory, as well as emergent forms of collaborative healing and restoration. My research is accountable to the Native peoples who live in California, and in my home region where my family currently resides. It is my hope that through this work I can provide a path to local communities seeking to build alliances beyond their national borders that can support their self-determination. Research objectives include:

- Indigenize the history of the Chile-California connection by following the stories of the land.
- Elaborate on the need for hemispheric and interdisciplinary collaboration for healing ecosystems and restoration reciprocal relationships.
- Map potential paths to collaboration between Mapuche and California Indians in response to climate system change and the increased incidence of wildfires in both regions.
- Advocate for Mapuche and California Tribal territorial restitution.

What are the historical links that have profoundly impacted the relationship Mapuche and California Indians have with their territory? How can collaborative exchanges around land

management create prospects for healing and restoring our relationship to the land during this crucial turning point in combating climate/ system change? How can hemispheric collaboration strengthen Indigenous peoples self-determination, sovereignty, and autonomy? Such lines of inquiry will be evaluated from field research conducted in 2013, continued archival research, historical analysis and comparative botany between 2014-present.

Grounding

Though I was born in southern Chile and spent part of my childhood there, I was also raised in five different countries throughout the Americas. When I moved to northern California in 2009, it felt like a homecoming. To my surprise I encountered plant relatives I had not seen growing outside of Chile—lemon verbena reminded me of my grandmother's after-dinner infusions, black elderberry reminded me of my aunt's flu-fighting elixir, the sweet-soothing smell of Lepichinia, sage-like plants, reminded me of summers by the Toltén river. In conducting research for this dissertation I have learned that the similarity in biota and landscapes is partly the result of a long history of exchanges between Chile and California. Missing from the official history, however, is the effect these exchanges have had on Mapuche and California Natives. As a multi-heritage Chilean-U.S. scholar in Native American Studies in the oldest and only doctoral program in the U.S. with a hemispheric scope, I am in a unique position to respond to this gap in the literature.

The impetus for this research began with my own embodied knowledge; smelling and tasting familiar herbs and plants from the other side of the continent, discovering the similarities between my place of birth and the place where I reside. This research, to paraphrase human geographer Yi Fu Tuan, was as much about geographic discovery as it was about self-discovery

(2001). This is a story "from the ground up" starting with my own personal, embodied narrative in order to understand the global (Goeman 2013, 134). Athabascan scholar Dian Million (2014) described theories as stories that we tell to make sense of our felt/ lived experiences, "…theories are active felt-embodied narrative practices that inform mobile abstractions, traveling or migrating across certain kinds of seemingly reified knowledge domains, reorganizing boundaries as they go..." (37). This dissertation is grounded in my own felt-embodied narrative, and, albeit remotely, grounded in the place where I was born.

I was recently asked a provocative question by a Mapuche peer, "How can you do place-based research when you are not *in* that place?" ("how can you do research on Wallmapu when you are not here?") to this question I will add another one that always accompanies me: "should I, or can I, do research on issues that affect Indigenous peoples as a multi-ancestry (*champurria*) person?" There are no single answers, in fact, grappling with them has created more questions. To begin with, is the land merely a physical space that we inhabit? or does the land inhabit us? According to Mapuche *kimün* (knowledge) the place where you are born dictates your character, therefore, it would logically follow that Wallmapu is a place I embody as I move and experience other places. Artists Ayumi Goto and Peter Morin (2018) ask similar questions in their exhibit titled, "How do you carry the land?"

> How do you carry the land? How do you carry the place where you were born, that you may have lost or have been forced to leave? How do you carry lands that you visit or pass through? How do you come to be in relation to the land where you are? When do you carry the land with you? How does the land offer to be carried? How does carrying the land change you, change us?

Seneca Geographer Mishuana Goeman (2014) asserts that we inhabit the land and the land lives in us, experiences of land become expressions of self (75); similarly, Momaday (1974) explains that the relationship between Native peoples and the landscape is one of reciprocal appropriation,

"in which man invests himself in the landscape, and at the same time incorporates the landscape into his own most fundamental experience…" (82). But, does this apply to people of mixed-ancestry? How can we carry the land if we were not nurtured by the Indigenous cultures and languages of our ancestors? These are complicated questions not easily addressed through constricting academic disciplines and through the language of the intellect.

Champurria

The discipline of Native American and Indigenous Studies (NAIS) provided me with space to critically reflect on my own identity as a multi-ancestry white-passing person, who, like many South Americans, cannot claim Indigeneity because of centuries of historical racism and assimilation deriving from Spanish systems of "casta" classification. Yet, because NAIS was created in conversation with Anglo settler-colonialism, there is a proclivity to center on a settler-Native binary over engagement with discourses on multi-ancestry and *mestizaje*. *Mestizaje* generally refers to the racial and/or cultural mixing between Indigenous peoples in the Americas and European colonists, however, it is a complex, historically and geographically contingent term that is deeply tied to class relations as Mendoza (2000) points out. *Mestizaje* is readily rejected in the US because belonging is defined by blood quanta, whereas in many places Latin America, membership is based on cultural characteristics such as language, community of origin (Castellanos et al. 2012) or class.[3] Historically, *mestizaje* has been a tool for erasing Indigenous identity by homogenizing citizenship and obscuring social and racial inequalities. Throughout Latin America it has been a mechanism of erasure and a means to consolidate nationhood

[3] See Friendlander's *Being Indian in Hueyapan* (1975)

because it denies the presence of Indigenous peoples with the claim that everyone is a *mestizo/a* (Bomberry 2015). In post-revolutionary Mexico, for example, *mestizaje* was the banner under which the country was reunited (Vasconcelos 1925). In Chile, *mestizaje* is challenged by the identity of *champurria*, found in the Mapuche sphere (Alvarado 2016; Brablec 2021). The Mapuche language term, *champurria*, was adopted from the Spanish term "champurrar" (mixing of different elements). From a Mapuche perspective, this mixed identity "enables its bearers to demarcate themselves from the dominant Chilean culture" (Brablec 2021, 138).

As a *champurria*, I occupy what Bhabha (1994) terms a "third-space," a domain of intercultural translation and mediation. My expression of this third space is similar to Sandoval and Anzaldúa's (1987) re-articulation of *mestizaje:* a bridge for healing the divided aspects of my identity; it is a place from where I can heal colonial ruptures and contest the rigid spatial categories and borders that are formed by what Seneca geographer Mishuana Goeman (2014) calls "settler nation-states' structuring of space." As a *champurria*, I am accountable to the Mapuche communities I am writing with/about as an allied scholar. My research argues for their self-determination, territorial restitution, and restoration of *az mapu*, the Mapuche legal system. While I propose integrating knowledges, I do not mean their token inclusion but rather, like Regan (2010), I am referring to "a paradigm shift from a culture of denial to the making of space for Indigenous political philosophies and knowledge systems as they resurge, thereby shifting cultural perceptions and power relations in real ways" (Regan 2010, 189). In shifting the paradigm, I also recognize the need to move away from damaged-centered research (Tuck 2009). Stories of colonization, conquest, slavery, genocide, are no longer sufficient, instead Tuck argues for research that highlights complexity and wholeness, rather than just damage (Ibid.).

Methods

The COVID-19 pandemic and the historic social uprising in Chile over the past year and a half presented many challenges for doing field research; therefore, I modified my original dissertation plan and conducted the majority of my research from California. Fortunately, academic institutions facilitated online research through making books and archives widely accessible through digital libraries such as Hathi Trust. As Grandia (2015) has previously argued, opening archives across borders is an essential decolonial practice. Newly accessible online archives allowed me to also share the information with Chilean and Mapuche colleagues, and broadcast my findings through a radio interview and an Instagram live with the Chile-California Council. I enriched the largely historical and theoretical narrative of my dissertation by drawing from research I conducted in Wallmapu (ancestral Mapuche homelands) in 2013, in lieu of new field research. Lastly, I draw from a body of scientific research to provide evidence for my arguments in the absence of new field research and limited in-person archival visits. This improvisational methodology resulted in eclectic and transdisciplinary methods.

Archival Research

I conducted original archival research to look for links that may have been overlooked in previous research on the Chile-California connection. Archival visits were conducted in the California State Library and Archives shortly before the pandemic. Additional documents were obtained online through the Chilean National Archives. Next steps will be to consult regional archives in Valparaíso and Concepción, to look at ship logs of California-bound ships throughout the 19th century, in hopes of obtaining evidence of Mapuche immigration to California during the Gold Rush. The journals of Chilean 49ers among other archival documents that I discovered in

the California State library and online in the Chilean National Archives, fleshed out the story of Chilean influence during the California Gold Rush and the impact that California's colonization had on the colonization of La Araucanía.

Gathering Plant Stories

Potawatomi botanist Robin Wall Kimmerer urges us to look at plants for wisdom, "They've been on the earth far longer than we have been, and have had time to figure things out…" (15, 2013). Their seeds carry ancestral wisdom and hope for creating life anew, they are actors and guides in our struggle for survivance. Kimmer tells us that plants understand their place as part of the collective, that we can either flourish or perish together. While this is true for plants living in their native environments, what about plants, such as wheat and pine, that have been uprooted and cultivated for profit in foreign territories thousands of miles away from their native habitats? How have non-native and invasive species played a fundamental role in the human settlement of Indigenous territory? What can these plants teach us about colonization and healing our relationship to land?

Since I do not speak the language of plants, I "heard" the stories and teachings of wheat and pine through various methods including poetry, historic accounts in archival research, and scientific research. Scientific accounts of wheat and pine will tell me about how they have adapted to their environments and the relationships they have within their ecosystems. Kimmerer explains that scientific experiments are a kind of conversation with plants,

> I have a question for them, but since we don't speak the same language, I can't ask them directly and they won't answer verbally. But plants can be eloquent in their physical

responses and behaviors. Plants answer questions by the way they live, by their responses to change; you just need to learn how to ask. (2013).

However, she also acknowledges that science cannot answer all the questions; science must be held alongside Indigenous knowledges for fuller understanding. By re-reading scientific and historic accounts through a Native Studies lens, I hope to hear the stories that wheat and pine have to tell us about colonization, healing, and restoration.

Field Research

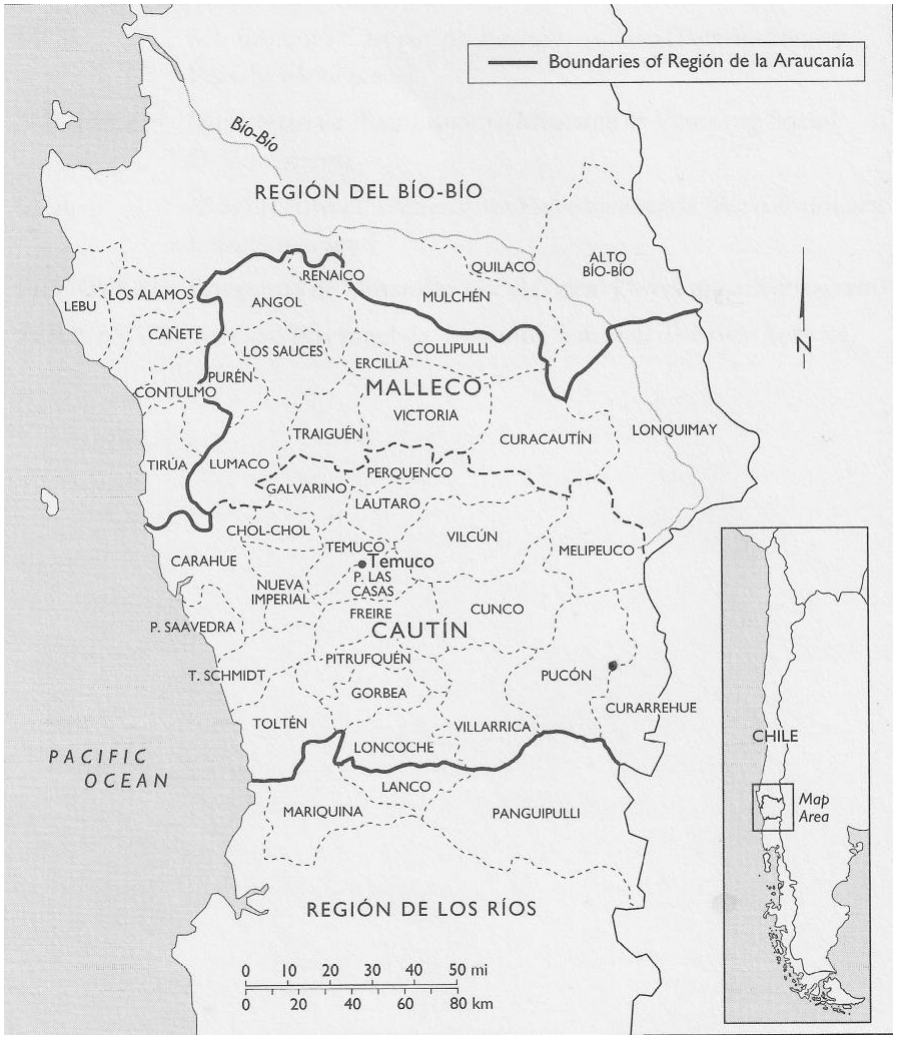
I complemented the scientific literature with field research I conducted in 2013 for my Master's thesis titled "Warriors for Tenderness: Self-determination, Development and Conflicting Worldviews in Mapuche Territory. For this dissertation, I had intended to carry out new in-depth interviews with community members throughout Chile and California to address the historic and contemporary relationships to wheat and pine, whether the plants holds cultural significance, their stories, and their uses. The in-depth interviews would have also allowed me to understand Indigenous perspectives on healing relationships to land, and would have helped me assess the necessity and impact of a hemispheric collaboration in response to climate/ system change. The 2013 field research proved to be helpful, but unfortunately did not cover all the topics I had originally planned to cover.

I conducted field research in 2013 throughout Wallmapu, but primarily in my home region of La Araucanía[4] (Fig 1). I chose this region for three reasons. First, the Araucanía has the highest concentration of rural Mapuche in the country. According to the 2012 census, 9% of the

[4] Otherwise known as *Gulumapu* in *Mapuzungun, the Mapuche language.*

population in Chile is Mapuche and although a vast majority of them now reside in urban areas, many continue to live in rural areas such as in La Araucanía region where they make up 31% of the regional population. Second, the Araucanía is a seedbed of Mapuche and Chilean resistance against neoliberal development. Lastly, I chose to conduct most of my research in the Cautín province in the south of La Araucanía, where personal kinship provided entrée.

Figure 1. Region of La Araucanía (*Gulumapu*)



Source: Richards, Patricia. 2013.

The data was collected through qualitative interviews, site visits, participant observation from June 2013 through May 2014. I identified participants through snowball sampling, starting with family acquaintances. I conducted 18 open-ended, in-depth interviews with Mapuche and Chilean elders and youth, adults, intellectuals, and public officials, whose names are changed for confidentiality reasons, with the exception of those who spoke at public events or have published their viewpoints. Interviews with two Mapuche elders included a sociolinguist and curator of the Mapuche exhibit at the American Indian museum in Washington D.C. were particularly illuminating on the role of language reclamation for the recovery of ancestral *kimün* (knowledge). Additionally, journalists, activists, the director of project RUPU at Universidad de la Frontera; a landowner in the Araucanía region; and a public high school teacher in Pitruquén.

Most site visits were unplanned and spontaneous. In Temuco, I visited Universidad de la Frontera on various occasions to interview people, attend talks, and to visit Project RUPU—a university department designed to meet the needs of the Mapuche students in the university. At Universidad de Chile in Santiago, I visited with Jorge Arrate—ex-presidential candidate and minister of the interior, economist, and Mapuche ally. At Universidad Católica in Santiago and in Temuco I attended meetings on Mapuche national liberation. In Valdivia I attended a community meeting hosted by the "Network of Free Seeds" (Red de Semillas Libres) in a high school. In Pitrufquén, I attended a youth meeting in a community center and visited a rural Mapuche *lof* (community). I also attended two gatherings, *nütram,* one in the city of Santiago and one in Temuco hosted by the "Consejo de Todas las Tierras". The *nütram* were titled "From Resistance & Territorial Control, Towards Mapuche National Liberation".

Mapuche scholars and activists deliberately describe their gatherings as *nütram*, which means "conversation, historical narrative," in *mapuzungun*. It is a discursive genre that can spur

historical analysis with the possibility of recreating collective identity and territory (Cañuqueo, 2004). As noted by a leader in a *nütram* in the Malleco province, "every time a *nütram* or a part of our history is recounted, we come to understand that the Territory expands much more than we realize, and is not limited to the current space of our communities..." (Ibid.). The communities in resistance assembled in the *nütram* were from the Malleco province north of Temuco and were represented by a *machi* (healer), *lonko* (head of a community), *werken* (messenger), and Mapuche poets. Since the 1990s these rural communities have resisted the encroachment of forest plantations and have faced a backlash of government repression, the murder of young activists, and imprisonment of community members under the Chilean state's antiterrorist law. Discussions in the *nütram* centered on the recovery of territory and the recreation of *Wallmapu* (Mapuche Nation, Fig. 2). At the time of the *nütram*, these communities were in active conflict with the Chilean state, therefore, tactics and strategies were rarely exposed in the discussion—seven years later, these conflicts are still active. Both *nütram* started with discussions on cosmology and origin stories by renowned Mapuche poets, Leonel Lienlaf and Elicura Chiwailaf. Mapuche poets are considered *genpin* (owners of the word), authorized voices of the community (Fierro and Gerragat 2004). The poet speakers were followed by a *machi* (healer) speaker who also addressed cosmology and matters of medicine and healing, and the *longko* (heads of communities) and *werken* (messengers).

Summary of Chapters

Chapter one, "You are on Native Land" provides an orientation to Mapuche ancestral territory and *kimün* (knowledge). I introduce C.F. Black's (2011) framework for Indigenous jurisprudence, which is part of the land, and the Mapuche legal system of *az mapu*. Chapter two,

"Wheat," begins with a discussion of the role of wheat in the creation of early states as per James Scott's grain hypothesis, and the parallels with the colonization of the Americas. This chapter introduces links between Mapuche and California Native homelands, beginning with Spanish colonization and ending with the California Gold Rush, with an emphasis on coerced labor and slavery in wheat cultivation. The Chilean wheat boom subsided in the early 1900s, and shortly thereafter, the barren wheat fields were replaced with monoculture *radiata* pine. Chapter 3, "Pine," addresses settler-colonial terraforming through James Scott's (1998) concept of "state legibility" and scientific forestry. This chapter also provides a brief historical overview of the displaced California-Native *radiata* pine, including its arrival in Chile at the turn of the 19th Century, the authoritarian neoliberal reforms that created the conditions for a "green rush" of radiata pine in south-central Chile, and the ecosystem changes that have occurred as a result of pine monoculture.

The simplification of the landscape for settler control and profit has had dire consequences on *ixofillmognen* (life in all its forms, reciprocal relationships) and biodiversity. The transgression of the *ixofillmongen* has resulted in catastrophic wildfires and severe droughts to which rural Mapuche communities in the ancestral homelands are increasingly vulnerable. Drawing on the Indigenous principles of "radical relationality," "renewing relatives," and "reciprocal restoration" (Yazzie and Baldy 2018, Whyte 2017, Kimmerer 2011), I argue that we urgently need to integrate knowledge systems across the hemisphere and across disciplines for restoration and healing. This is both a practical matter (colonizers simplified the landscape with invasive species) but also a deeper question of building a world, as the Zapatistas put it, in which many worlds fit. The geographic similarities of the Pacific coasts on the northern and southern hemisphere created similar terrains of traditional ecological knowledge, but also similar

geographies of resistance. These were two areas where Spanish incursions left remnants on the subsequent state governance systems, but there were large zones both in California and Chile that successfully resisted Spanish incursion. Much as California Native movements are leading the call for "land back," I advocate for the return of Mapuche territory and the restoration of *az mapu* to address the catastrophic consequences of system changes.

Chapter 1: You are on Native Land

Introduction

In Native American and Indigenous Studies the words place, territory, land, landscape, and homelands are synonymous and carry both physical and metaphysical components (Goeman 2015). Land is a living embodiment of personal and collective history, and for those who know how to listen, land reveals lessons for correcting our behavior and for creating reciprocal relationships with other beings (Middleton 2015; Watts 2013; Basso 1996; Deloria 1973, Black 2010). "Traditional Indigenous viewpoints recognize that we live in a moral landscape governed by relationships of mutual responsibility, which are simultaneously material and spiritual" (Kimmerer 2001). Indigenous peoples have created legal systems over millennia to maintain reciprocal relationships with the land.

The Mapuche word for land, *mapu*, alludes to various tangible and intangible dimensions. More than a noun, it is a theoretical construct that implies relationships among a diversity of beings across the land (Paillal 2006). The Mapuche legal system which includes the laws of the earth, *Az mapu* (literally the "face" or "characteristics" of the land) are place-based norms of conduct that govern our individual and collective behavior, guiding reciprocal relations so that cosmic balance can be maintained (Chihuailaf Nahuelpán 2009; Paillal et al. 2006; Curihuentro 2012). To show how Mapuche maintain reciprocal relations with the land, the first section of this chapter will provide an orientation of Mapuche ancestral territory through Mapuche *kimün* (knowledge) and various maps. The following section will discuss the significance of Indigenous geographies for renaming, remapping, and recovering territory. The third section will deepen the importance of land for guiding correct behavior through an introduction of Mapuche jurisprudence. The fourth section will introduce the similar geographic characteristics of

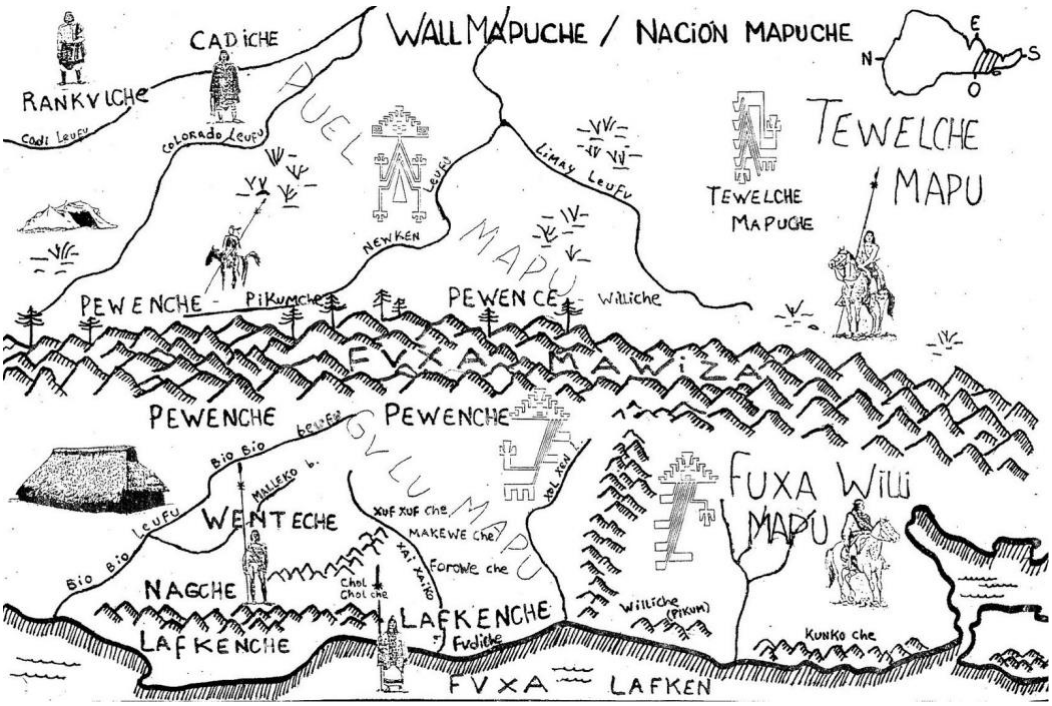
Wallmapu and California Native homelands, and presents the possibility of maritime exchange among Indigenous peoples prior to the arrival of Europeans.

Wallmapu

The ancestral territory of *Wallmapu*[5] expands from the 30th parallel north, to the 44th parallel south, roughly the size of the state California from San Diego (32nd parallel north) to the border with Oregon (42nd parallel north). A north-south orientation, however, is not appropriate for Mapuche territory, as they orient themselves to the East, to face the rising sun (Figure 2 and 3). Mapuche have inhabited their ancestral territory since 500-600 B.C. and controlled the largest territory of any ethnic group in Latin America prior to European invasion (Bengoa 2000, 2004).

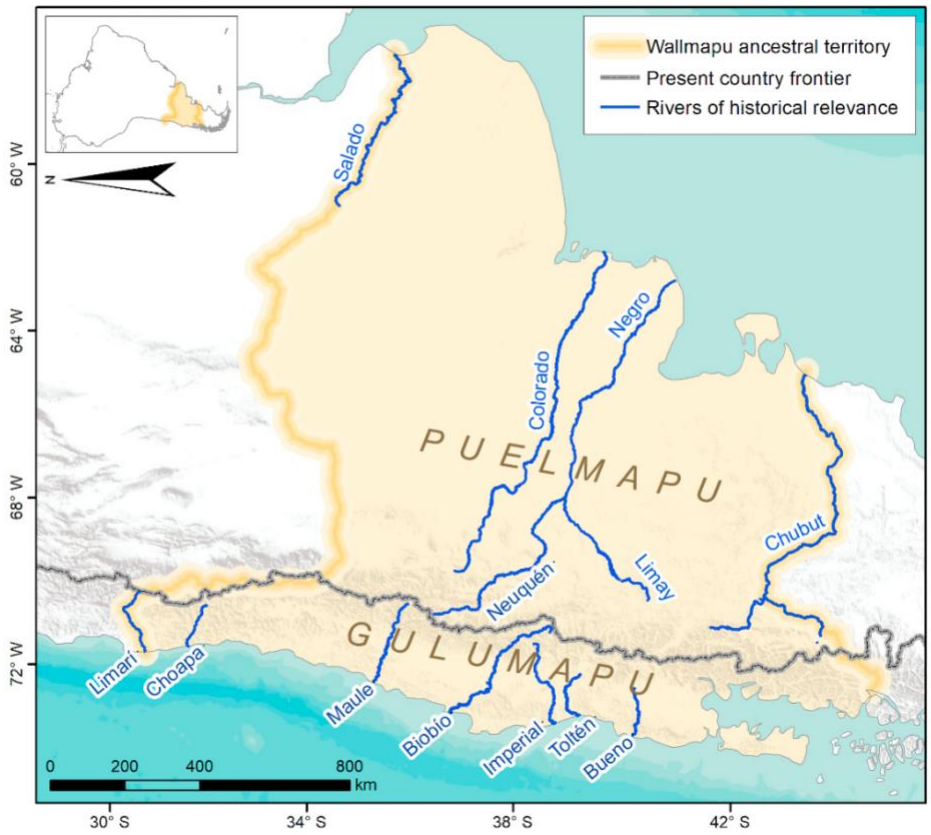
[5] *This term refers to Mapuche territory or "Mapuche country" and arose in the 1980's as a political category to make territorial demands (Le Bonniec 2009).*

Figure 2. Wallmapu, Ancestral Mapuche Territory



Source: Marimán et al. 2006.

Figure 3. Wallmapu, Ancestral Mapuche Territory



Source: Bañales-Seguel et al. 2020

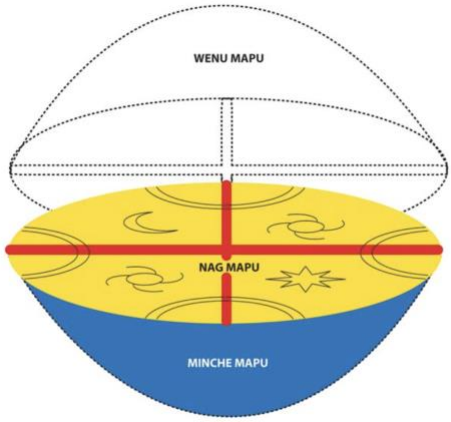
<u>*Xawümen*</u>: The above map (Figure 3) depicts the borders of Wallmapu as a blurred line to represent the Mapuche concept *xawümen* (place of encounter), this is distinct from the concept of frontier (place of separation) (Melin et al. 2017; Bañales-Seguel et al. 2020). In the European cosmology, a border deals with separation and division of the earth, while from the Mapuche cosmology, the concept of *xawümen* is associated with uniting and linking parts (Melin et al. 2017). Historically, rivers and bodies of water were places of encounter; upon Spanish arrival, rivers became frontiers with the settlers. Following a 100-year war with Spanish invaders, the ancestral territory was reduced and consolidated into the region of La Araucanía, from the 37 N

to 39 S (from a perspective of California, this area would stretch roughly from Santa Cruz to Ukiah in California).

Mapu: (Figure 4) *Mapu,* the concept of space, alludes to material and immaterial spaces and forces that complement and interact with each other—every dimension has a particular denomination (Melin 2017; Marimán et al. 2006, p.36). Land and territory are an integral part of a greater whole, formed by various units of vertical and horizontal space. Within them live humans, spirits and powerful forces in an interdependent relationship (CEPAL, 2012). The spiritual and transcendent dimensions of *mapu* were lost in translation by early Spanish cartographers (mostly military) who defined the word to denote *material space* in their interest of dominating the land (Ibid, p.30). In Mapuzungun[6], material space, *nag mapu*, is only one of several spatial dimensions. Vertical spaces are organized into *Wenu Mapu* (space above), *Nag Mapu*[7] (tangible material space; land), and *Miñche Mapu* (under the earth), among others. These units are part of the *waj mapu*, Mapuche universe. According to Martinez-Berrios (2012) they constitute the ancestral jurisdictional space upon which families developed their material and spiritual life as sovereign peoples until the occupation of La Araucanía. Given this understanding, it is impossible to dissociate the territorial, cultural, and political rights of the Mapuche.

[6] The Mapuche language. Words in Mapuzungun are italicized, Spanish words are in quotes.
[7] The *nag mapu*, or material space/territory, is further subdivided into units. The *lof* (community) is made up of several families of patrilineal descent occupying the same territory. Each *lof* contains a *rehue* (healer's altar). A grouping of nine communities and their nine altars, *aillarehue*, is formed for special religious, festive, or military occasion. *futalmapu* (great space) is a geographic confederation of various *aillrehue* formed during times of war. All these units are part of the, *wallmapu*, or Mapuche nation. These units have changed in definition throughout time in response to colonization and the restructuring of their social life.

Figure 4: Dimensions of Mapu



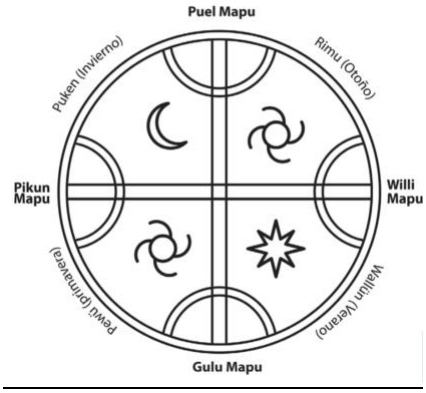
Source: Melin et al. 2017

Che: The concept of che, is the process of formation of the person. According to Melin et al. (2017) it is inseparable from *mapu*, since it is a human condition located in a space and based on an ethical, value, normative and of knowledge to be achieved throughout life in relation to a defined *mapu* (*lof, rewe*). *Mapu* and its characteristics influence the person and their *az* (character, style, personality, temperament). For example, the characteristics of a person from the *Nagche* area will be different from the from the *Pewenche* area. The land, in other words, influences the character of a person.

Meli Wixan Mapu: (Figure 5) The four directions are components (seasons) that make up the cycle of the year which also have consequences on lunar cycles, shoots, sowing, harvesting and reproduction, among many other aspects of life (Melin et al. 2017). Of the four directions, the east side or Puelmapu is the part that guides Mapuche existence, it is a source of positive energy, since it is related to sunrise and dawn (Ibid.). Other components of the *Meli Wixan Mapu* are *Pikun Mapu* (North space), *Gulumapu* (now part of southern Chile), *Willi Mapu* (South space),

and *Puel Mapu* (now part of southern Argentina), all components of the *Meli Wixan Mapu* are considered complimentary and balance each other out (Ibid.)

Figure 5. *Meli Wixan Mapu*



Source: Melin et al. 2017

<u>*IxoFillMogen*</u>: This concept is often distorted to mean "biodiversity", however, Melin et al. (2017) explain, it is an expression of life in its broadest sense, in all forms and dimensions found within the *mapu*. More than "nature" or "biodiversity", *IxoFillMogen* is the understanding that people are embedded in a reciprocal web of relations. Mapuche poet Elicura Chiwailaf explains:

> *Itrofill mongen* means totality without exclusion, integrity without fragmentation…we are but a small part of the Universe, just another Part of Nature—the Earth—just another part in the web of reciprocity. Because of that, we are told; we must take from the Earth only what is necessary to live…The Earth doesn't have a utilitarian meaning to us. We take from her what we need in our brief time in this world, without depleting her, just the way she take us—little by little—to transform us into water, air, fire, vegetation. (*Nütram* fieldnotes 2013)

As the above poem describes, our relationship to all life is one of interdependence and permanent and continuous complementarity. As described later in this chapter, *ixofillmongen* is closely

linked to *az mapu* (the laws of the earth) a set of norms, values, or principles which guide our behavior.

Indigenous Geographies

Some of the maps and concepts presented here are part of a unique Mapuche atlas created by a Mapuche geographer native in Mapudungun (Miguel Melin), a Chilean geographer (Pablo Mansilla), and a Chilean lawyer (Manuela Royo). The original maps helped a Mapuche community in the territory of Kurakautín (north of La Araucanía), led by Alberto Curamil, win their fight against two hydroelectric dams by demonstrating the cultural significance of the Kurakautín river basin as well as the biodiversity that would be impacted by the dams. The Mapuche atlas was carefully constructed to meet Mapuche cultural protocols and informed by Mapuche language and epistemologies. The methodology that was used to create the maps included oral narratives based on traditional gatherings such as the xawün and cultural songs. The resulting product is an eclectic collection of topographic, political, cadastral, artistic, and narrative maps that highlight the political, economic, and social value of the land, and the relation of the community to spirits of the land, water, mountains. All the maps are oriented towards the East and include terminology in Mapundungun and place names as a statement of decolonization that moves our understanding of space beyond the settler imaginary. The first part of the Atlas relates to understanding of space through Mapuche epistemology; the second maps the historical dispossession of Indigenous peoples in the context of colonialism and imperialism; the maps in third part convey the territory of the community; and the fourth part provides legal and cartographic recommendations for other Indigenous communities who wish to mobilize

against extractive projects. The atlas is an example of how a decolonized practice of geography can be mobilized for land defense and reclamation.

Decolonizing the field of geography is key to the process of renaming, remapping, and recovering Indigenous territories within Abiayala[8] because it is deeply entangled with the history of colonialism and imperialism. Georaphy's development as a discipline arose from a combination of religious, political, and economic factors (Livingstone 1992) and profited from through the sustained appropriation of local and Indigenous geographical knowledges (Sidaway 1997). Indigenous geographers such as Mishuana Goeman (2013) and Renee Pualani Louis (2006) demonstrate how the practice of geography can be decolonized by centering on Indigenous epistemologies, protocols, and geographical theories. Indigenous geographers and allied scholars are innovating new ways of mapping and imagining land, space, and place beyond the limits of colonial constructs.

[8] Indigenous peoples have adopted varied territorial defense strategies in response to the intensified exploitation and privatization of land and water following neoliberal reform. These strategies include (re)naming and (re)mapping the land. Alternative names for America, such as Abiayala[8], have been adopted by Indigenous communities and Pan-Indigenous movements such as the World Indigenous Council. The concept of Abiayala rose to prominence in the 1970s in Kuna Tule territory in Panama. Abiayala means "land in its full maturity" in *Chibchan* (Kuna language). The Kuna[8] believe that there are four cycles of life on earth: *Kualagun Yala, Tagargun Yala, Tingua Yala, and Abia or Abiayala*, the last cycle (Escalante 2014). The Kuna employed the term Abiayala in the media after winning a lawsuit against a U.S. tourism enterprise which threatened their autonomy and territory (Keme 2018). After hearing this story, Bolivian Aymara leader Takir Mamani suggested that Indigenous peoples and Indigenous organizations use the term Abiayala in their official declarations to refer to the American continent: "giving foreign names to our villages, our cities, and our continents is equivalent to subjecting our identities to the will of our invaders and their heirs" (Arias et al. 2012, 7. My translation). Therefore, renaming the continent would be the first step toward epistemic decolonization and a foundation for building self-determination (Escalante 2014). According to scholars such as Keme (2018) and Armando Muyolema (2001), Abiayala has become a way not only to refer to the continent, but also a differentiated Indigenous locus of cultural and political expression to decolonize and recover the hemisphere for Indigenous peoples. "Abiayala offers us the possibility to articulate a collective locus of enunciation that goes beyond the borders imposed on us by Europeans and their descendants, the possibility to rethink and recover the world from our own epistemological millenarian legacies." (Keme 2018, 48-49). The proposal to rename the continent, according to Keme, does not cancel or omit other categories or place names used and recognized by Indigenous nations.

In Cartesian logic, "to know reality" is to have a correct representation of it (Taylor 1989 in Livingstone 1992). This led to the importance attached to picturing, mirroring, representing, mapping, and modeling the world as the only reliable way of knowing it (Livingstone 1992). Explorers and later governments used maps to assert their truth claims and power over the land and people (Goeman 2013, 27). Maps became powerful tools for explorers and governments, serving the double function of opening then closing a territory (Wood, 2010). Imperial and colonial maps opened the land through the conceptions of *Terra Incognita* or *Terra Nullius* (Goeman 2013), emptied from Indigenous peoples. Maps also closed the land as they were instrumental in creating national boundaries, in treaty-making, and (to this day) in regulating and determining spatial practices (Ibid.).

In contrast to Cartesian dualism, characterized by a representational mode of thinking, Indigenous epistemologies are generally characterized by a holistic or relational framework that stresses relations and processes (Luis 2006; Deloria 1973; Blaser et. al, 2010; Goeman 2013; Shaw et. al, 2006). "Given the web of relationships and responsibilities, Indigenous geographies have long been characterized by an overarching emphasis on place, the specific, the meaningful and the interrelated—an emphasis that contemporary geography has recently come to recognize as important." (Shaw et. al, 270). In his book of Native American maps dating from before 1492 to the present, historian of cartography Warhus (1997) states:

> To read [Native American maps] it is necessary to suspend western preconceptions of what makes a map. Unlike western cartography, where the primary document is the physical map and the conventions of scale, longitude, latitude, direction, and relative location are believed to "scientifically" depict a landscape, Native American maps are pictures of experience. They are formed in the human interaction with the land and are a record of the events that give it meaning. Far from being unsophisticated of "primitive," these Native American maps were as functional and transmissible as the products of Rand McNally or National Geographic (3).

The geography of the land is part of a bigger interconnected mental map conveyed through oral histories (Ibid.). In *Mark My Words: Native Women Mapping Our Nations*, Seneca geographer Mishuana Goeman (2013) builds on these oral narratives to discuss the importance of stories as maps. She asserts that unlike Western maps whose intent is often to represent the "real," "Native narrative maps are not determined and always open for negotiation." (Ibid., 25). She explains that Native peoples had and still have their own claims to land through place-based oral stories that predate imperial and colonial maps. An example of this is the Mapuche creation story of *Waglen* (star), which I will introduce in the following section. History and geography combine to create what Deloria (1973) terms a "sacred geography." "Every location within the original homeland has a multitude of stories that recount the migrations, revelations, and particular historical incidents that cumulatively produced the tribe in its current condition." (Ibid., 121). Drawing from sociologist Emile Durkheim, Cresswell (2013) claims that in much of the western world, sacred spaces such as churches or temples are considered to be a bounded space divided from the everyday or 'profane' space.

As the Mapuche atlas shows, a decolonized practice of geography is centered on Indigenous epistemologies, protocols, and geographical theories. Coombes et al. (2011) note that open-ended methods, specifically storytelling, should be embraced in recognition of their role in the geographic imaginaries of many Indigenous peoples (474). They emphasize the significance of storytelling as a methodological approach as it may have broader relevance to social geographers' understandings of place. They claim that a mindful consideration of the interplay between story and place-making may have potential to reconcile Indigenous and non-Indigenous experiences of cohabitation. Massey (2005, 130, in Coombes et al. 2011) argues that places

should be seen as collections of stories and spatial relationships as "a simultaneity of stories-so-far." This resonates with Mishuana Goeman's (2013) argument for narratives as maps.

Story-telling as Mapping

Goeman also examines Native American narratives that (re)map and contest colonial geographic concepts. She focuses on the work of Native women who engage in changing the geopolitical imaginary by "narrating geographies" that remap settler-colonial boundaries. She asserts that cognitive maps, produced through narratives, hold power; citing critical geography's claim that nation-states produce place out of space through the narrative of nationalism (27). Goeman also interrogates essentialist definitions of Indigenous peoples that fix them temporally and spatially. The pitfalls of simplifying Native peoples "geomanticizes" their relationship to land into mystical or merely political categories that undermine their mobility and overlooks the gendered and violent nature of colonization (37). To this end, she also critiques Native nation-building efforts replicate the paradigm of settler societies. She stresses that it is imperative to refocus Native nation-building efforts beyond settler models of territory, jurisdiction, borders, and race (37). Citing Massey (2005) she challenges rigid spatial categories such as nations and borders that are formed by settler nation-states structuring of space. Massey's conception of place as "flow" (beyond the unrestricted global movement of capital) stresses the permeability of place as a "meeting place" of cultures and people, similar to the concept of *xawümen* introduced earlier (Goeman, 2013, 109). Goeman's approach builds on the work of geographers like Massey, who expand the boundaries of place as more than just a point on a graph and describe how it carries a "way of being-in-the-world." (Ibid., 9). Oral histories perceive land as having its own dynamic history, not as a contained space but connected to multiple other spaces, histories,

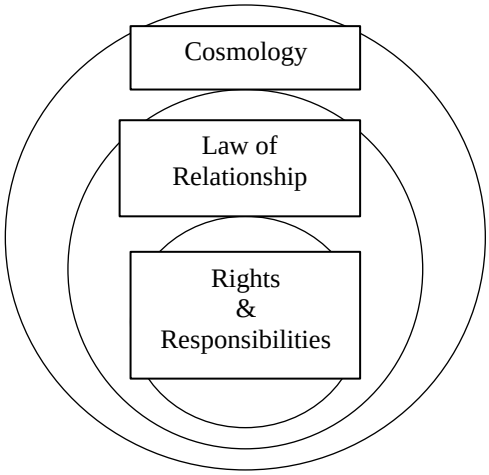
and people. These narratives represent the "flows" of space in ways that normative maps, homogenous, bounded, and temporally linear, cannot (Ibid., 206).

The challenge faced by mapping Indigenous territory is to capture the forms of knowledge that are left off the map, finding other ways of understanding difference and new forms of social organization, "…the task of Indigenous mapping should not be to further elaborate on what remains a profoundly colonial understanding of the world. It should be to change it" (Bryan, 2009). A critical first step is to recognize Indigenous cosmologies. By including the information deemed "too esoteric" or "difficult to scientifically document or cartographically represent", Bryan claims we are "opening up the space – both literally and figuratively – for people to develop their own understandings of what it means to be Indigenous and make maps that reflect that perspective" (Ibid.). This process is possible by paying greater attention to the ways Indigenous peoples map themselves through songs, stories, and art, and plotting these into coordinate systems, properly projected into a spherical space.

Indigenous Jurisprudence

The following section introduces C.F. Black's (2011) theoretical framework of Indigenous jurisprudence (Fig. 6), Through Black's triadic organizing principle, I will describe how cosmology (the outermost circle) helps explain how Mapuche are patterened into their environment in a web of interconnected relationships. Their cosmology informs the sacred laws by which they live (*az mapu*), and ultimately informs the rights and responsibilities (inner circle) that guide our relationships.

Figure 6. C.F. Black's Triadic Organizing Principle of Indigenous Jurisprudence



The First Circle: Cosmology

Black describes cosmology as a circle that encompasses all one perceives to be reality. It is from here that people get a sense of who they are and how they fit into the grand plan (Ibid., 27). The outsider must enter the Indigenous world first through their cosmology. Black explains this is necessary because a people's cosmological creation story defines the way that they were patterned into their environment and how their principles, ideals, values, and philosophies originated. She asserts that cosmology is not unlike a theory: "for, is not a theory a story of how things occurred…" Mapuche creation stories, *epew*, are historical narratives, or theories of how things came to be, which ultimately guides how they should lawfully conduct themselves in their environment. According to Marileo (2003), it translates to "mirrors of our identity": *epe*=almost, *pew*=to see or find oneself.

The Origin of the Universe

Earth was a stone home where a marriage and their children lived: küyeh (moon), antü (sun), wüñejfe (bright star), cherufe (animal-like beings) y che (person). The parents

went out of the house and the children fought and didn't tend to the fire. The untended fire grew so much that it made the house explode. The children flew in all directions. The moon, sun and bright star flew upwards, the animal-beings flew into volcanoes, the person, who was the youngest, fell into rocks. Then, they said "never again we will fight, it's better that we work together. The moon guards the earth at night, and the sun guards the earth in the day.[9]

This story alludes to the big bang and the interconnection of humans and the non-human cosmos. Humans are part of universal elements that also contain life and as such we must learn to work in harmony. This story also contradicts human-centric perspectives. The human is the youngest child in the cosmic family, not central to its existence. The implication that this story has for Mapuche is that law is not made by humans, as Black explains, it is "ordained and deposited into the land by the primordial energies. The source of the law is beyond humankind and their individual concerns; rather, it sits in the realm of eons of time, time in the cosmic energies of the big bangs of the universe…" (Ibid., p.50). The following story describes the origin of life on *nag mapu*, and the reciprocal relationships that the first woman established with the land.

The Origin of Life on Earth: The Story Waglen

Wenumapu Chao (the father in the sky space) created a unique space, flat, and infinite like a circle and he called it nag mapu (material space) and left it suspended in the air. Then, he looked among the other creations that floated in space and chose the young

[9]This story was obtained from a UNICEF-funded television show for Mapuche children on a local channel in the Araucanía region: https://www.youtube.com/channel/UCo3mardQDG17KYpOdyKgdPQ

Wanglen (star) to occupy the nag mapu. She fell from the sky and began to walk. Sweating, crying from pain, and bleeding, she walked from the puel mapu (east) to the pikun mapu (north), then to lafken mapu (west), and from there to the willi mapu (south). Despite her pain, Waglen returned to where she came from in the east and looked back on her trail. She was amazed: her sacrifice and exhaustion had been converted into ravines and mountains; her tears and blood had turned into streams, rivers and lakes; the trees and the grass had grown so that her feet did not hurt. Everything that had been created at the feet of Waglen's travels was alive, and needed to be taken care of. [10]

The story of *Waglen*, the walking star, explains how Mapuche became patterned into the land. Her trajectory traced the geographic territory where Mapuche were to live. Not unlike other Indigenous creation stories, such as the Haudenosaunee story of Sky Woman, *Waglen* embodies the feminine, the First Woman. When *Waglen* falls from the sky and travels through earth, she creates the land and territory. Land and territory are an extension of *Waglen's* circumstance. Like Sky Woman, "in becoming land or territory, she becomes the designator of how living beings will organize upon her. Where waters flow and pool, where mountains rise and turn into valleys, all of these become demarcations of who will reside where, how they will live, and how their behaviours toward one another are determined." (Watts, 2013, p.21). This story also illustrates Watts' (2013) concept of place-thought. "Place-thought" is "based upon the premise that land is alive and thinking and that humans and non-humans derive agency through the extensions of these thoughts" (Ibid., p.21). The understanding that land has power, experience, and knowledge is fundamental to Mapuche law and a driving force behind the movement for autonomy.

[10] This story was obtained from a UNICEF-funded television show for Mapuche children on a local channel in the Araucanía region: https://www.youtube.com/channel/UCo3mardQDG17KYpOdyKgdPQ

The Origin of Mapuche Culture: The Story of Kai Kai Filu and *Treng Treng Filu*

The Creator of earth and sky lived in heaven with his family. The sons of the Creator desired to create and govern things, so they contested the Creator's power. As punishment, the Creator threw them down to earth and turned them into a giant snake, Kai Kai. Kai Kai was destructive and hated humans, so the Creator also made another snake, Treng Treng, to protect the humans from Kai Kai's rage.

Then, the Creator travelled to earth and taught humans how to select seeds, how and when plant them, when to harvest the fruits of the earth and how to conserve them. He taught them how to take care of animals and gave them fire. In time, however, humans forgot his teachings and turned against each other, disrupting the sacred order. The Creator asked Kai Kai to teach the humans a lesson, and Kai Kai made it rain, raised the ocean and lakes, flooding the land. Humans summoned the help of Treng Treng, and Treng Treng raised mountains so that humans could climb them to safety. The surviving humans performed the sacrificial ritual of Nguillatun and the flood subsided. (Diaz, 2007; Millalén Paillal, 2006)

Many cultures reference floods as fundamental events in the formation of their culture. As Millalén Paillal (2006) notes, modern science has shown that the cyclical nature of climate change caused floods, and each culture then interpreted such natural phenomena according to their own unique way of understanding the world. For the Mapuche, Millalén Paillal contends, this story is a synthesis of the fundamental elements of Mapuche culture. *Kai Kai* and *Treng Treng* are opposing strengths or energies that combat each other. The imbalance of these forces was created by the disruption of the sacred order. Although the earth and mountains provided a

haven from the flood, it was ultimately the use of the ritual *Nguillatun* that re-established the sacred order and saved humanity (Díaz, 2007, p.51). Rituals, Alfred (1999) holds, are the ways humans harness power and connect to the spiritual forces that control nature and the universe. Power flows from their respect to the land and the natural order. Both the story of *Waglen*, and the story of *Kai Kai* and *Treng Treng* communicate the importance of responsibility, equilibrium and preservation (Marileo, 2003). These stories transmit norms of social and cultural conduct and behavior (Millalén Paillal, 2006, p.26).

The Second Circle: Law of Relationship

The law of relationship is a pervasive concept in other Indigenous laws (Black, 2011; Alfred, 1999). Black describes its shape as a dyadic structure of two moieties (two parts that cannot be separated). In Mapuche culture, the law of relationship is actualized through the concept of *Az mapu* (law of the earth) and is represented by the story of the snakes *Kai Kai* and *Treng Treng,* two complementary forces that become imbalanced with the disruption of the sacred order. When balance between these moieties is achieved, a new condition is created in which the forces compliment each other and order the environment. This order is maintained through understanding the interconnectedness of all things, human and non-human.

Az mapu: Laws of the Earth

> *The universe as a whole, the whole of nature and the earth is an open book. They guide us, help us to foresee danger and teach us. All that is required to receive that message is paying attention and opening up our hearts.* (Marileo, 2003)

Az mapu (literally the "face" or "characteristics" of the land) are place-based norms of conduct that govern our individual and collective behavior, guiding reciprocal relations so that

cosmic balance can be maintained (Chihuailaf Nahuelpán 2009; Paillal et al. 2006; Curihuentro 2012). *Az mapu* can be understood as a set of rules, norms, and patterns of social, religious, and cultural behavior established according to Mapuche relationship and interaction with the particular environment they occupied (Millalén Paillal, 2006, p.25). Although it is specific to each place, the *az mapu* has broad principles such as reciprocity (*wiñoltuwün zugu*), respect (*yamün*), admiration (*ekun*), solidarity (*kejuwün*), caring for others (*üjwentun*), self-regulation (*kishu mapuche günewün*), and the defense of oneself and the collective (*inkawün*) (COTAM, 2003).

The *az mapu*, much like Black's "Law of Relationship," is based on the balance of complementary elements and the interrelationship of all things (*Ixofillmongen*). As depicted in the story of *Kai Kai filu* and *Treng Treng filu,* human and non-human beings interact in a struggle of positive and negative energies (*küme* and *weda newén*). According to Marileo (2002) and Chihuailaf (1999), balance and harmony is maintained through proper conduct (*nor felen*) guided by the principles *az mapu*. The *az mapu* regulates the existence and harmony of the earth and cosmos. Mapuche justice, then, can be equated with restoring cosmic equilibrium (Curihuentro, 2001, p.31).

Ceballos et al. (2012) explain that for Mapuche, people and earth are made up of *newen* (spiritual force or energy present in the cosmos; similar to the Aboriginal Australian concept Black describes as the *Djang*); therefore, they are connected spiritually and materially. Furthermore, the *newen* of spaces, animals, plants, and water is protected by *ngen* (administrators or guardians). These guardians govern spaces and bestow certain powers to elements contained within it. This observation alludes to Watt's (2013) notion of place-thought: land is intentional, it has life and agency, it has law. Through *feeling* Black (2010) suggests,

humans can communicate with the unseen and glean knowledge from the landscape and the universe. When the law of the land is felt, individuals become mindful of their own actions, internalizing the law and rending it intimate, in contrast to Western reliance on external prompts and norms.

The transgression of these relationships and the order of *az mapu* can result in cosmic imbalance, illness, and a potential crisis of human survival. Mapuche healer *machi* Millaray Huichalaf explains, "our principles are based on *az mapu*, of respect and mutuality between us, the Earth, the animals. If you break that equilibrium, that's where illness begins. Capitalism is the sickness that we have today on the Earth."[11] *Machi*, chosen by spirits to mediate between the *nagmapu* and the spiritual dimensions, are responsible for managing the basis of the *Az mapu* (Ñanculef 2016). Their work is fundamental in the exercise of wellbeing of the people and earth.

The Third Circle: Rights and Responsibilities

Corntassel (2012) critiques rights derived from state-centric forums as "re-gifted rhetoric from artificial states." He maintains that Indigenous nations' responsibilities to the natural world originate from their long-standing relationships with their homelands, and that these relationships have existed long before the development of the state system. "As Indigenous peoples" he states, "we act on our enduring, inherent responsibilities." Black (2009) explains that the revelatory relationship between human and spirit reveals a person's own inner voice of authority that validates the need for balance and taking responsibility for actualizing the Law in the Land.

[11] Interview with Machi Millaray. Accessed on September 13, 2013, from http://adkimvn.wordpress.com

Corntassel notes that there has been some success in advancing Indigenous claims through global forums and legal channels, such as the Inter-American Commission on Human Rights, but for many Indigenous peoples, these are not enough to protect their self-determination and cultural rights. "Given that a state-centered rights discourse has limits in terms of addressing questions of Indigenous recovery and community resurgence, a responsibility-based ethic grounded in relationships to homelands and community knows no limits. Our ancestors and future generations will recognize us as Indigenous by how we act on these responsibilities." (Corntassel, 2012). Simmilarly, Mapuche poet Elicura Chihuailaf states:

> Our elders, our parents, aunts, uncles, and grandparents say that the fight of our land has to do with tenderness. Our struggle has spanned through time, and will continue without a doubt in the thoughts, in the actions of coming generations, because it is implicated in the universe, nature, mother earth. We consider ourselves another part of her. We consider ourselves her sprouts, her children…A question we ask ourselves daily is: "what grateful son or daughter wouldn't rise up when their mother is overwhelmed?" It is an uprising of tenderness. We are warriors for tenderness. (fielnotes 2013).

Black's and Corntassel's analyses of responsibilities help explain how Mapuche land defenders legitimize their struggle against timber companies, which will be described in chapter 4. In light of capitalist transgressions on the order of the cosmos, Mapuche are acting on their legitimate responsibility to restore balance. In the story of the snakes *Kai Kai* and *Treng Treng*, we learned that the disruption of the sacred order can provoke natural disasters. Millalén Paillal (2006) posits that the battle of these two forces, represented by the flood, occurred when the Mapuche did not comply with their responsibility to maintain balance (Ibid., p.25). This responsibility or "stewardship principle," calls for them to defend the right of all life forms to live unthreatened and free (Marileo, 2003).

Figure 7. The mirrored landscapes of Chile and Western North America.

Source: Molly Roy Cartography for Cinthya Ammerman

Chile and California share similar geomorphology, climate, and vegetation. Both regions are bordered by the Pacific Ocean and mountain ranges; the Andes and the Sierra Nevada. Southern Chile and the uppermost part of northern California have temperate rainforest, and on the other extreme both have deserts. Both places also share similar fertile central valleys where agriculture is concentrated. Of the five Mediterranean-type regions of the world, south-central Chile and California have the most similarity in terms of climate and geomorphology. Both regions are considered biodiversity hotspots, and both have been shaped by the invasion of a significant number of alien plants of which they share 491 species—including 25 species that are native to California and 37 species that are native to Chile (Jiménez et al. 2008). These plants are telling of a shared history of immigration, settlement, and colonization that "was similar in the two regions in terms of magnitude and origin until the mid-1800s" (Ibid.). These plants may also signify exchanges prior to European invasion in the Americas.

The Chile tarweed or coastal tarweed, is considered native to both California and Mapuche territory. Its Latin name, *madia sativa*, is derived from its Mapuche name, *madi*. It is arguably one of the most intriguing species shared by both regions because there is a long history of its use by both Mapuche and California Indians that preceded European invasion. Scientists have noted that Pomo and Coastal Miwok used the seeds for the same purposes as Mapuche (Zardini 1991). They were eaten directly, expressed for oil, or ground into flour. Scientists also speculate that the plant originated in the Pacific northwest, however, they are still unsure about how it got to Wallmapu, which raises the question of our connection beyond colonization. To quote Forbes (1996 in Frank 2019) "migration is ancient, as well as recent" (237).

The flawed Bering Strait theory claims that the continent was populated approximately 15,000 years ago through migration over an ice bridge from Asia. Native peoples throughout the hemisphere have criticized this theory claiming that it is a political project that perpetuates the idea of the continent being a *Terra Nullius* by denying that its original inhabitants had lived on the land for many millennia prior to European arrival. Vine Deloria Jr. (1997) provides several arguments against the theory including a lack of Indian oral tradition to support it. Furthermore, the theory denies the possibility for advanced technology for long-distance maritime travel between the two hemispheres, which is not an impossibility.

Indigenous peoples have long understood the ocean as connective medium (Diaz 2015, 102). Archeological evidence that supports oral histories of migration by maritime travel are beginning to surface[12]. Scholars have found conclusive evidence for long-distance maritime exchanges across the Pacific prior to European invasion (Ioannidis et al. 2020), however, there is currently no evidence to support Indigenous oceanic migration and exchanges between Native peoples of North and South America. If pre-Columbian maritime crossed the Pacific between present-day Peru and Polynesia, we can only assume North to South travel also occurred. Nevertheless, the possibility of long-distance maritime travel cannot be discounted (Forbes 2007). Although this dissertation focuses on European-led transpacific exchanges between the southern cone and the Pacific Northwest, this does not preclude the prior existence of Indigenous maritime travel between the two regions.

[12] In 2017, archeological evidence was found supporting the oral history of maritime immigration of the Heiltsuk Nation, an Aboriginal group based on the Central Coast of British Columbia

Conclusion

"Land" or "*Mapu*", is a multidimensional concept of space that transmits history, knowledge, and laws (*az mapu*) that guide our behavior within the reciprocal web of relations (*Ixofillmognen*). The chapter provided an orientation of Mapuche ancestral territory and *kimün* (knowledge) through various maps, and discussed the importance of decolonizing geography for remapping, renaming, and recovering land. The third section established the importance of land for guiding correct behavior through Black's (2010) triadic organizing principle of Indigenous jurisprudence. The fourth section introduced the similar geographic characteristics of Wallmapu and California Native homelands, and presented the possibility of maritime exchange among Indigenous peoples prior to the arrival of Europeans. The following chapters will investigate the links created between these two ancestral territories through the colonizing process of wheat and pine. In the last chapter, I will return to the concepts introduced here to advocate for territorial restitution in the creation of Chilean climate change mitigation and adaptation plans.

Chapter 2: Wheat

Introduction

Throughout the Americas, the Spanish established an agricultural system that allowed them reproduce the elements of a Mediterranean diet (Bauer 2001) and assisted them in exerting control over Indigenous populations. Frank (2019) points out that Latin for "to plant," *colere,* is also the root word of *colonus* and colonize. *Colere* literally means an "offshoot of original plant, or a new plant and plantation…" (Frank 2019, 243). The cultivation of European plants, primarily wheat, was central to the invasion and settlement of California Native territory and Wallmapu. In the first section of this chapter I address how, and why wheat became synonymous with European civilization, Christianity, and fundamental to the colonization of the Americas. In the second and third sections of this chapter I will discuss the specific impact of Spanish/ European agricultural system and wheat on Wallmapu and California Native territories. Spanish invasion profoundly changed ecosystems in the Americas, reducing diverse food sources and subsistence practices of Indigenous peoples in favor of monoculture grain cultivation. The social, cultural and ecological changes impelled by the cultivation and wheat and other European crops disrupted previously-established relationships of consent and reciprocity with the land, and impacted Indigenous cultures, health, self-determination, and food systems. The fourth section of this chapter deepens the hemispheric connections between both regions during the California gold rush in the mid-1800s. Chilean wheat was introduced during California's mission period, however, it was not until the California gold rush that it would make its imprint and eventually become the foundation of the new state's budding agricultural economy. This chapter lays the foundation for the forthcoming chapters on the current environmental crisis in Wallmapu and the

increased vulnerability of Indigenous peoples to climate change. The threads of "legible" monocrops, coercion, forced labor, and control in the name of "progress," connects these early agricultural states to the continued colonization of the Americas, and (to be discussed in the following chapter), to the introduction of neoliberal reforms and *radiata* pine in Chile.

Wheat, Civilization, and Colonization

Wheat and the rise of "Civilization"

The Neolithic revolution, about 12,000 years ago, marked our transition from hunter-gatherers into agricultural grain-based societies (rice, maize, barley, and wheat). Fixed field agriculture of cereals enabled population growth and became foundational to the development of city-states throughout the world. Contrary to the popular belief that agriculture enabled sedentism, Scott's (2017) account of the early state[13] formation in Mesopotamia—where wheat originated—indicates that hunter-gatherer communities were already in the process of domesticating cereals thousands of years prior to the formation of the first states. Unlike their successors, however, they relied on a diverse food system and not on the intensive agriculture of a singular cereal crop. It is yet unknown why our predecessors opted to settle for intensified agriculture, though Scott surmises it may have been due to climate change (Ibid., 122-123).

Wheat gave rise to early states, Scott argues, because only grains are best suited to "concentrated production, tax assessment, appropriation, cadastral surveys, storage, and rationing," in other words, "legibility" (Ibid., 21). Wheat is a determinate crop that is harvested all at once, making it ideal for elites to tax; other crops such as legumes, are less suitable for

[13] A state, per his definition, is an "institutional continuum"; a polity, specialized administration, social hierarchy, city walls, tax collection and distribution. States come into existence in the last centuries of the 4th millennium BCE (Ibid. 23).

taxation because they are indeterminate and can be harvested as long as they are growing; tubers are particularly impractical for taxation, as they can be stored in the ground and hidden (Ibid., 129). Grain agriculture enabled taxation and surplus creation, the specialization and division of labor, hierarchies, and complex societies. Through grain cultivation, embryonic states created a legible food system in order to better control its subjects, reducing alternatives to a diet dominated by grains by penalizing or forbidding nontaxable subsistence activities, thereby creating a legible, measurable, and "fairly uniform landscape of taxable grain crops and to hold on this land a large population available for corveé labor, conscription, and, of course, grain production." (Ibid., 23). In need of a larger work force for labor-intensive wheat cultivation, early states waged war on rival polities and raided non-state communities, "barbarians,"[14] to capture slaves (Ibid.). Scott's "grain hypothesis" for Mesopotamia parallels the process of European invasion and settlement in the Americas.

> "…the logic of assessable and accessible crops and people applies as well to smaller scale efforts at control and legibility one finds in the Spanish *reducciones* in the New World, many missionary settlements, and the paragon of legibility, the monocrop plantation with the workforce in the barracks." (Ibid., 25).

The same process occurred through European colonization and later through the formation of American nations.

Similar to the fragile early states, coercion and slavery were essential to establishing early Spanish settlements in the Americas, who often failed to hold the Indigenous populations (due to precarious conditions such as epidemics and starvation due to narrower diets, overcrowding, and

[14] Scott explains the etymology of the word "barbarian," originally a paradox for the sound of non-Greek speech, all early states reinvented the term to distinguish themselves form those outside of it (32). Non-state people were often mobile, lived off diverse and shifting subsistence strategies, in other words, "illegible" forms of production (Ibid. 33).

living with domestic animals). The use of coercion and slavery in the establishment and maintenance of early states encourages us to reexamine the civilizational narrative of progress of agricultural societies (Ibid. 26-27*). If "progress" was a desirable and inevitable outcome of our linear evolution, then why was coercion necessary for its maintenance and establishment?* This narrative of civilizational progress is fraught with contradictions, yet it remains the pervasive ideology underlying our modern views of development. The threads of "legible" monocrops, coercion, forced labor, and control in the name of "progress," connects these early agricultural states to the colonization of the Americas, and (to be discussed in the following chapter), to the introduction of neoliberal reforms and *radiata* pine in Chile.

The Cultivation of Wheat and Early Spanish Colonization

According to Food Studies scholar Earle (2012) the humoral medicine of early Spanish colonizers and settlers, the physical body was *generated* through diet. They believed the right foods would protect them from the environmental challenges and illnesses they encountered in the Americas, hence their concern with establishing the "right" (European) foods. According to humoral medicine, wheat bread was highly nutritious and necessary for optimal health (Ibid.). Food was responsible for the constitutional differences that separated Europeans from Amerindians; food created Indigenous and Spanish bodies, and it could also turn one into the other; diet was fundamental to the construction and maintenance of the Spanish body (Earle 2010). Thus began the agricultural ventures of Spanish colonizers in the Americas, to them, the success of European crops on American soil paralleled the success of Spanish settlement. In other words, without wheat, Spanish settlements in the Americas could not flourish (Ibid., 701).

The success of Spanish colonization depended wholly on the successful cultivation of wheat and wine.

In addition to being fundamental to the health of colonizers, wheat was also fundamental to the evangelization of Indigenous peoples (Ibid., 700). Colonial writers equated the cultivation of faith with the cultivation of wheat, "faith" Earle (2012) surmises, "*was* wheat". Citing Jesuit writer José de Acosta[15], Earle outlines the stages of a successful evangelization campaign which included planting and cultivating seeds that would yield "'abundant ears of wheat; that is to say, the faith'" (Ibid. 159). Earle concludes that evangelization can thus be understood as a process of substitution, "whereby the unwholesome 'roots and stumps' of Indigenous idolatry were replaced by the nourishing wheat of Christianity." (Ibid., 159). She offers this quote from Dominican priest Diego Durán in the 1570s:

> Never will we succeed in teaching these Indians to know the true God if we do not first eradicate and totally remove from their memory their superstitions, ceremonies, and false cults to the false gods whom they worship, just as it is not possible to grow a good field of wheat in mountainous and shrubby soil if you have not first completely removed all the roots and growths that it naturally produces.[16]

For Spanish colonizers, wheat was not only necessary for their health, but also, necessary for their religion. Catholic communion could only be carried out with a eucharist of wheat and grape wine. Although the possibility of a eucharist made of maize was discussed, ultimately, religious authorities decided that the body of Christ could only be made of wheat (Ibid.). Despite the fact that colonists depended on maize for nourishment, it was considered inferior to wheat and incapable of transformation into the body of Christ, "The creator scattered his largesse

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[15] Acosta, *De procuranda indorum salute*, book 2, chap. 15, section 3 (vol. I, p. 207); Acosta, *Natural and Moral History of the Indies*, 20 (book 1, chap. 2).
[16] Durán, Historia de las Indias de Nueva Espan˜a, 1: 3 (prologue to vol. 1); and "Mercedes y libertades concedidas," 580 (doc. 61).

everywhere; to this hemisphere he gave wheat, which is the chief nourishment of man, and to the hemisphere of the Indies he gave maize, which holds second place after wheat for the sustenance of men and animals." (Acosta in Earle 2010).

The Spanish justified the appropriation of Indigenous territory through declarations such as the Papal Bull *Inter Caetera* of 1493 and the *Requerimiento* of 1512. *Inter Caetera,* issued by Pope Alexander the VI, would eventually form the foundation for the "doctrine of discovery" that later became the basis of all European claims in the Americas, as well as for the United States' expansion[17]. The Papal Bull declared that all land not occupied by Christians could be claimed; it also gave full title of the *Indias Occidentales*[18] to the Spanish crown[19]. Upon encounter with Indigenous peoples, captains of the conquest were required to read (in Spanish and often without an Indigenous interpreter) a *Requerimiento* to the Indigenous peoples, pressuring them to adopt the Catholic faith and stating that that the Spanish Monarch was entitled to the land by God, and that if the they wanted to remain on the land they needed to pay a gold tribute:

> "If you do not, or if you maliciously delay in so doing, I certify that with God's help I will advance powerfully against you and make war on you wherever and however I am able, and will subject you to the yoke and obedience of the Church and of their majesties and take your women and children to be slaves, and as such I will sell and dispose of them as their majesties may order, and I will take your possessions and do you all the harm and damage that I can" (Galeano 1971).

[17] In the 1823 US Supreme Court case *Johnson v. McIntosh* Chief Justice John Marshall held "that the principle of discovery gave European nations an absolute right to New World lands." Essentially, Native Americans only have a right of occupancy, which could be abolished.
[18] Columbus thought he had arrived in Asia, thus naming the territory "West Indies."
[19] The 1494 Treaty of Tordesillas drew a line north to south and granted to the Spanish Crown all lands east of the line and the Portuguese crown all lands west, which included present-day Brazil.

Juan López de Palacios Rubio, author of the *Requerimiento*, also argued for the slavery of Indigenous peoples, claiming that "some are meant to serve and others to dominate." (in Valenzuela Márquez 2009, 229). Similarly, friars and priests debated the humanity of Indigenous peoples (Earle 2010), and used evangelization to legitimate violence and slavery as a means to punish them for their "sins" (Valenzuela Márquez 2009).

Wheat and The Spanish Invasion of Wallmapu

The Americas were home to a medley of agrarian cultures, as well as peoples who stewarded and enhanced the food usufruct values of natural ecosystems (what Ford and Nigh call "forest gardening") and many seasonal combinations of the above. Like many Native California tribes, flour from a ground-up nut (*piñón* in Spanish) was the basis of Mapuche diet prior to Spanish invasion (Bengoa 2000). The nut is fruit of the *pehuén* tree (araucaria in Spanish), which is found on the foothills of the Andes mountains. The diverse landscape, ocean, rivers and lakes, mountains and plains offered an abundance of food sources and multiple subsistence practices based on hunting, gathering, animal husbandry of the native chilihueque (a llama, which became extinct after introduction of European domesticated animals). Mapuche also cultivated wild grains such as quinoa (Chenopodium quinoa), *madi* (Madia sativa), *teka* (Bromus berterianus), *mangu* (Bromus mango)[20], as well as peppers, chilies, green beans, potatoes and pumpkins (Gumucio 1999; Bauer 2001; Torrejón and Cisternas 2002; Pardo and Pizarro 2005; Barreau 2014).

[20] Both Teka and mangu are part of the Bromus family which are closely related to wheat-grass

Figure 8. Mapuche women grinding grain with a *kuzi* and *ñumkuzi* (grinding stone and hand stone) grain circa 1820.

Source: Schmidtmeyer, P. 1824. Travels into Chile over the Andes in the years 1820 and 1821: with some sketches of the productions and agriculture. London : Longman, Hurst, Rees, 1824.

Following the invasion of Mapuche territory in 1540s, the Spanish introduced an array of domesticated animals and crops, primarily cereal crops of wheat and barley. The familiar Mediterranean climate of central-south Chile was ideal for European crops; “Here [in Chile], more than in any other niche in the Americas, the Europeans were able to replicate an essentially Andalusian agricultural regime of wheat, cattle and horses, pigs, grapes, and olives.” (Bauer 2001, 90). Native peoples in in the Andes regions, notes Bauer, posed less resistance to wheat than in Mesoamerica; the introduction of new foods and animals was not purely based on coercion, some immediately incorporated the newly introduced foods into their diet through a

wide variety of preparations[21]. Scholars also speculate that wheat quickly replaced maize in southern Chile because wheat was frost hardy and could be grown in more acidic soils (Gumucio 1999, Barreau 2014), additionally the tools and knowledge from the cultivation of brome grasses (in the wheat lineage) could have been transferred to the cultivation of wheat. Most importantly, wheat grew and ripened faster than other cereals which would be particularly advantageous for Mapuche communities in areas prone to raids by Spanish (González de Nájera 1971; Bengoa 2003; Montalba and Stephens 2014).

> The need for mobility encouraged herding over agriculture for subsistence, and the burning of fields, commonly done by the King's soldiers during the summer campaigns, broke the back of Indigenous agriculture. It no longer made sense to plant maize in open areas. This was one of the reasons for the early and rapid incorporation of wheat into the Indigenous economy. In southern Chile wheat has a short productive cycle. It can be harvested in December, whereas maize is harvested in February or May, which left it highly vulnerable to summer attacks (Bengoa 2003, 302)

Within a generation of Spanish arrival, the Mapuche integrated the use of the horse in warfare and in their wheat harvests, utilizing them for threshing (*trillas*) as the Spanish did. According to Torrajón and Cisterna (2003), the Mapuche assimilation of wheat, horses, and Spanish weapons, are all forms of "antagonistic acculturation," the adoption of elements from the invading culture as a way to better resist them.

[21] See Barreau (2014) and Smith, E.R., (1855) for Mapuche wheat preparation.

Figure 9. A wheat harvest in 1854

Source: http://descubre.bibliotecanacional.gob.cl. Accessed on July 21, 2021.

The Spanish attempted to submit Mapuche into servitude in their estancias, inciting war (Pacheco 1991; Torrajón and Cisternas 2003). The brutal war of Arauco (1550-1656) had profound social, economic, and ecological consequences. Mapuche fled into the forested areas of the south and those captured became slaves by the "law of war" (Valenzuela 2009). A chronicler in the early 1600s notes, "Indians of war are as abundant as our wheat and barley." (González de Nájera 1971). Using the language of the early wheat states, Spanish soldiers justified Mapuche slavery by claiming them to be "barbarians without reason and servants by nature." (Rosales

1989, 587). Although formal slavery was prohibited by the Spanish crown, it was declared legal in 1608 after Mapuche destroyed seven major Spanish cities (Valenzuela 2009). The formalization of slavery led to an increase in slave raids (*malocas*); Mapuche slaves were sold as far north as Peru; the slavery of Mapuche was the motor behind the Arauco war (Valenzuela Marquez 2009 and 2017)[22]. Spanish generals tricked Mapuche communities into meeting with them under the guise of creating agreements, and upon arrival to the area where Mapuche awaited them with a celebratory feast, the Spanish would murder their leaders and take the people captives (Reséndez in Marquéz ed. 2017). Mapuche also took captives, particularly women for wives, as polygamy was a sign of wealth. Enslaved Spanish women were made to carry out field labor, "obligated to cut the wheat and corn, not allowed to leave the sickle from morning till night even if they were burning under the sun in the wheat fields..."[23] (Relación para el Virrey del Perú in Avila 1994). The war of Arauco continued with variable intensity until 1641, when the Spanish negotiated surrender with the signing of the "Parlamento de Quilín. The treaty recognized the independence of the Mapuche by Spain, a unique occurrence in the Americas, as Mapuche were the only native group whose autonomy and sovereign territory was officially recognized by the Spanish (Richards 2013). The treaty consolidated Mapuche territory to 10 million hectares (approximately the size of Guatemala) bordered by the river Bío Bío on the north. For the following two hundred years, hostilities on the frontier never entirely ceased (Bengoa 2000).

22 Though given the growing Pacific trade, it would not be surprising if they were taken further up to central and north America.

23 "obligóndolas a segar trigo i cortare/maíz sin que les permitiesen dejar la hoz desde la mañana ala noche aunque las viesen arder en/os trigares del sol.., en losfríos insufribles del invierno las enviaban a los campos a cortar leña."

By the 1700s, both Chile and Wallmapu produced large amounts of wheat for export. Ships departed from and arrived to the major port cities of Valparaiso in northern Chile, and Talcahuano on the frontier with Mapuche territory[24]. The frontier city of Talcahuano became a cosmopolitan hub for merchants and explorers from Asia and Europe. One such explorer, French naval officer, Jean-François de Galaup, Comte de La Pérouse, stayed in Chile for two months before travelling to northern California in 1786, where he would make one of the first recorded plant exchanges between Chile and California. Upon his arrival, he gifted Chilean potatoes to the Franciscan mission at San Carlos Borromeo in Carmel, California (Melillo 2015). He also gifted friars a hand mill, which greatly increased the speed at which wheat was processed into flour (Davis 1894). In his travel journals, La Pérouse also provided a first-hand account of abuse of Native Americans in California missions, comparing them to Chilean missions, "I have already freely made known my opinion of the monks of Chile, whose irregularity seemed to me, in general, scandalous." (La Pérouse in Rudkin 1959, 98).

Another foreigner, U.S. chronicler Edmund Reuel Smith, describes the process of crossing the frontier near Talcahuano into Wallmapu in 1849—all Chileans and foreigners were required to apply for a permit to enter Wallmapu by a customs office in the Chilean city of Los Ángeles. Mapuche lonkos (chiefs) required documentation for entry[25] (Smith 1855; Cayuqueo 2018). Smith's chronicles also note the presence of white/ Chilean peasant farmers who grew wheat on land owned by toki (war chief) Juan Mañilwenu. Cayuqueo (2018) explains that for Mapuche, agricultural labor did not hold the same degree of prestige as military campaigns,

[24] While many foreigners passed through the cosmopolitan port city of Talcahuano, it is yet undetermined if Mapuche also travelled to other Pacific lands.
[25] This was required under the 1825 Parlament of Tapihue, article 22.

ranching and, having large families with multiple wives. Prestige was not achieved by sowing wheat (Ibid.).

Wheat and the Spanish/ European Invasion of California

Beginning in 1769, two hundred years after the Spanish first invaded ancestral Mapuche territory, Franciscan friars established the first missions of California, disrupting the land management practices and diverse food systems that tribes along the central-south coast of California had cultivated over millennia. The Spanish, accustomed to fixed field agriculture, were unable to comprehend different forms of agriculture and plant husbandry. These varied and shifting subsistence strategies were "illegible" to Spanish settlers (to borrow the term from James Scott). They believed the carefully managed and interplanted fields and forests of Native tribes were the product of nature (Costo and Costo 1987). Missionaries substituted Native American food sources for European crops and domestic animals, believing they were providing a more assured or "civilized" food supply for the tribes. Instead, they created conditions of extreme starvation, Costo and Costo note, "The Spanish missions reduced California Indian population by about three-fourths and still could not provide an adequate supply of food for the survivors with the European form of agriculture." (Ibid., 53).

Within the first few years the Spanish destroyed important resource areas. Oaks and pine forests were extracted for buildings, they allowed their horses and cattle to graze unrestrained, destroying Indian fields and food resources, increasing erosion and disrupting hydrological processes (Costo and Costo 1987). Despite the vast exploitation of native people's labor, wheat and barley crops yielded poorly because they were not adapted to California rainfall patterns

(Davis 1894), and thus could not replace the variety of interplanted native foods which were adapted to erratic rainfall (Costo and Costo 1987). Among the most prevalent wheat variety cultivated in the California missions was the Chilean "Little Club" wheat (*Triticum compactum homboldtii*). A 1925 study of plant matter in adobe bricks of mission buildings found Chilean Little Club wheat in missions across Monterey county, Los Angeles county, Alameda county, and Sonoma county (Hendry and Kelly 1925). Contrary to the widespread belief that Chilean wheat was introduced during the California gold rush, this aforementioned study reveals that it was brought much earlier, likely via Mexico in the late 1700s. By the mid 1800s, the ubiquitous Chilean club wheat would become the foundation of California's booming agricultural economy (USDA 1923), playing a major role in the agricultural history of California down to the present day (Hendry and Kelly 1925, Davis 1984).

Slavery, as has been established, was intrinsic to the agricultural economy of settlers. Reséndez (2016) describes the slavery of California Natives through an account by a Swedish doctor. Dr. Sandels visited Sutter's fort in 1843 during a wheat harvest where he observed the presence of several hundred Native peoples. Sutter lured Miwok and Nisenan laborers through gifts and through the establishment of a "company store" system, whereby laborers were paid in clothes (Ibid.). Sutter also created a private army that enabled him to participate in the slave trade of Native peoples, "It was common in those days to seize Indian women and children and sell them; this the Californians did as well as Indians." (Sutter in Reséndez, 2016). While Sutter did have allies and laborers from surrounding Miwok and Nisenan communities, many more refused to submit and Sutter retaliated by capturing and enslaving them, particularly their children.

> From the first, he was in the habit of seizing Indian children, who were retained as servants or slaves at his establishment, or sent to his friends in different parts of the

> country. But he always took care to capture for this purpose only children from distant or hostile tribes (Bancroft 1890, 138).

Soon after gold was found near Sutter's sawmill in 1848, people flocked from all corners of the world in search of a fortune.

Prior to the gold rush, Chile also played a role in California's independence from Spain. Chile claimed their independence from Spain in 1812, and by then they had already begun to develop an influential fleet under the guidance of Admiral Cochrane, a disgraced officer of the UK navy, who later became a Chilean citizen. One of its most impressive ships—the "Araucano"[26] was commissioned from Boston. Initially named "Columbus" by the U.S. crew who delivered it to Chile, it was renamed "Araucano" upon its arrival (Lopez 1969). The ships "Araucano" and "Independencia" sailed on the first Chilean expedition of California in 1821-1822, historians credit this expedition with directly influencing California's Declaration of Independence (Lopez 1969; Davis n.d.) . In need of supplies (meat and wheat flour), the "Independencia" infiltrated the golf of California concealed as an English ship. It was late into Mexican war of Independence and the missionaries of southern California, who depended on Spain, ignored Mexico's independence. Upon arrival, Wilkinson sent armed Chilean expeditions into Baja California and one such expedition was captured by the Spanish and imprisoned in the missions. Wilkinson then sent a negotiator to the missions, but he was too imprisoned. The Chilean naval fleet was notorious for their role in the American independence from Spain, and upon learning of their presence in California, Father of the Missions Friar Pedro González, released the Chilean prisoners (Davis n.d.). Fearing retaliation, he also swore California's independence from Spain. Little is known of the fate of the "Araucano", whose crew mutinied

[26] "Araucano" was the name given to Mapuche peoples by Spanish.

and attempted to sail to Alta California, landing in Santa Barbara and later in Tahiti (Lopez 1969).

Wheat and The California Gold Rush

Some of the first prospectors to arrive in the California gold rush were Chilean, because the route to San Francisco from the Chilean port cities of Talcahuano and Valparaiso was only four to five weeks long, considerably faster and safer than Atlantic ocean travel (which could take over six months) or crossing the continent. Melillo (2015) describes the largely unrecognized Chilean contributions to the early foundation of the California; by the mid 1850s, eight thousand Chileans had arrived in San Francisco, they labored as bricklayers, shopkeepers, sex workers, and contributed significant mining knowledge to the Anglo miners (Nasatir 1975; Melillo 2015). Additionally, Chile provided the literal foundation for San Francisco's waterfront real estate— Chilean ships were disassembled and the timber was used for scaffolding, Chilean flour sacks lined muddy sidewalks. The increasing demand for lumber for new buildings presented an opportunity for merchants, such as Chilean José Ignacio Palma, who shipped lumber to San Francisco in 1848.[27] (Melillo 2015, 36.). Most importantly, from 1848 to 1855, Chile exported 73,000 metric tons of flour to California (Sepúlveda 1959, 45). A century after the gold rush, Chilean poet and diplomat Juan Guzmán Cruchaga noted, "The early settlers in California supplied themselves with Chilean merchandise and without this assistance they would have probably perished." (Melillo 2015).

[27] The lumber sent to San Francisco was more than likely native trees from Chile, though I have not found sufficient evidence to support this claim.

During the 1850s-1870s, Chileans also re-introduced hearty club wheat varieties credited with jump-starting California's agricultural economy. Several cargoes of Chilean club wheat were received and used for seed during the period in which California and Oregon were settled (USDA 1923). Chileans, in no small part, contributed to the settlement of California and the violent displacement of California Natives, yet their influence on California is "conspicuously absent from nearly all of the major encyclopedias of the Western US…" the common depiction of the US West was seen as the product of westward expansion that neglected the cultural and environmental influences that originated on the Pacific coast in the 1800s (Melillo 2015, 4). Similarly, Gerber (2010) observes that Chile's influence on California's wheat economy and the importance of grain farming in California is largely forgotten—wheat was the largest (non-mineral) export of 19th century California. As the gold rush waned in 1852 wheat agriculture and the Native American labor that sustained it gave a boosted the new state's economy (Gerber 2010).

Gold Rush Effects on Chile

Although California became self-sufficient in wheat production by the end of the 1850s, Chile remained a major international supplier until the early 20th Century (Sepúlveda 1959). The Chilean agricultural boom that began during California's gold rush drove Chilean settlers into the densely-forested frontier with Mapuche territory in search of farmland (Bengoa 2000). Chilean settlers burned vast amounts of native forest to create the climate and space for cereal crops, livestock and settlement, a practice that had previously begun with the first Spanish colonizers of the 16th and 17th centuries (Armesto et al. 1994; Donoso and Lara 1996; Torrejón and Cisternas 2003; Kublock 2014; Holz and Veblen 2011).

Chilean historian and gold rush chronicler, Vicente Pérez Rosales, is responsible for igniting one of largest forest fires of the time. He became an agent of colonization upon his return from the California gold rush, likely influenced by his admiration of John Sutter whom he met during his excursion. In his travel journal he proclaimed, "To Sutter, then, belongs the glory of having established the first model colony to flourish in the western part of the American continent." (Pérez Rosales 2003). During an early reconnaissance trip on the frontier with Mapuche territory in the 1850s, Pérez Rosales lit fires that burned for three months, clearing roughly 90 square miles that would be deeded to German colonists (Kublock 2014, 59; Armesto et. al 1994). The native forest was seen as a barrier to European colonization; deforestation served the dual purpose of clearing the land for cattle and grain cultivation, as well as expelling Mapuche from their lands (Armesto et al. 1994). In his study of early wheat-based states, Scott (2017, 24) asserts that areas of great natural caloric and nutritional abundance offer a "fugitive" diversity of subsistence options to mobile populations, making them illegible to the state. Per this logic, deforestation was the Chilean's state attempt "to turn ungovernable land into legible, taxable agricultural land" (Ibid., 56). Ecocide thereby complemented policies of genocide, much as the better known slaughter of buffalo in the Great Plains was part of military strategy for subjugating western tribes

Inspired by California's colonization, the Chilean state carried out a violent campaign to occupy Mapuche territory from 1861 to 1883, around the same time as the California Native genocide of 1850-1880. The Araucanía held the promise of a *terra nullius* for agricultural development and gold prospecting[28], "The dream of a Chilean California was the engine behind

[28] Vicuña Mackenna, Chilean gold prospector in the California gold rush, wrote various newspaper articles in a Chilean newspaper in the 1880s speculating about gold in the Araucanía (Bengoa 2000, 13).

the "Pacification of the La Araucanía" (Bengoa 352, 2000). A newspaper in 1866 echoed the Chilean elite's hope that the land would be conquered and cleared of native forests and its Mapuche inhabitants: "…the territory between the Bío-Bío and Imperial rivers will gradually be conquered: the industries, the population, the settlements will flourish, La Araucanía will disappear with time and in its place a new California will rise" (in Melillo 2015, 144). The military initiative was financed and backed by wealthy men such as Jóse Bunster, also known as "the King of Wheat," who at one point controlled half of the cereal production in the country (Cayuqueo 2014). He owned nearly 20,000 hectares, among them an hacienda by the name of "California." Bunster constructed a large empire of wheat mills in the newly conquered Mapuche territory, as well as the first saw mills in Wallmapu, where much of native forest would be made into fire wood and timber for forts and buildings (Ibid.). The thousands of hectares of land that fed Bunster's wheat enterprises is now replete with pines for a forest industry that advances unstoppably through Wallmapu (Ibid.).

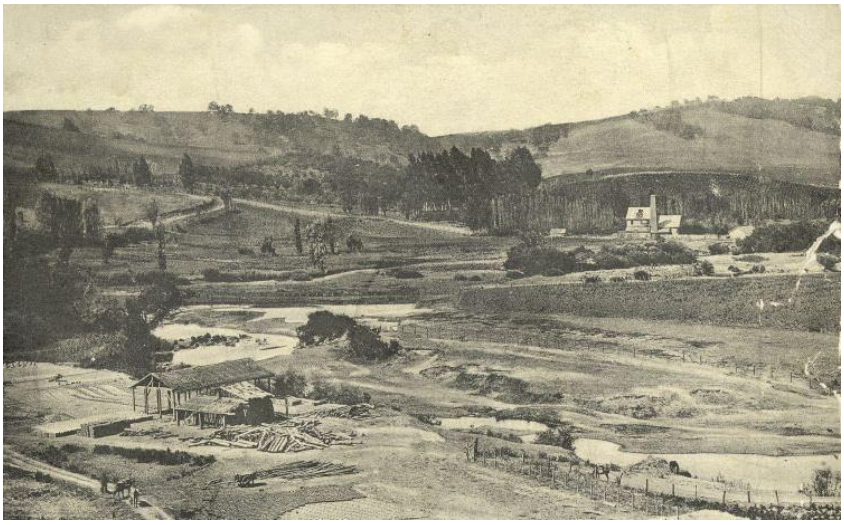
Wheat cultivation remained a large enterprise in the newly conquered territory of Wallmapu in the early 1900s. An agronomist's study of the city of Temuco concluded that the extensive deforestation of native forest was reducing the annual rainfall, "…wheat is cultivated every year on the land cleared with…fires in virgin forests or second growth forests…" (Kublock 2014). Non-Indigenous peasant farmers, such as my grandfather's family, as well as Mapuche, continued to play a large role in the cultivation of wheat in the Araucanía. A sub-inspector of my home town of Pitrufquén observed in 1905,

> Today the indíjenas are no longer nomads. They acquired the habits of sedentary life a long time ago…the majority of the commerce in the small villages of the frontier…is moved by the indíjenas. During harvest season, it is enough to see the considerable

number of carts loaded with wheat that they take to the great warehouses of Temuco and Imperial…" (Ibid., 65).

Wheat exhausted the soil, and to reopen the land for cultivation many Indigenous and peasant farmers resorted to deforesting (Ibid.) The timber of native forest also provided another source of income. These practices continued through the mid 1900s, as my grandfather explains, they grew wheat until the soil was infertile, and then they cut down the native forest for timber. A 1920 study by the US Forest Service reported that deforestation by fire had destroyed 9 million of Chile's 38.9 million acres of forested land (Ibid.). The study also notes, however, that "forest fires burn over large areas every year except in the limited region inhabited by the native Araucanians, who are very careful to keep fires from the [native araucaria] pine forests on which they depend during certain seasons for much of their food." (Zon and Sparhawk 1923, 747).

Figure 10. The exploitation of native forest in Traiguén (La Araucanía) 1919



Source: Source: Museo Histórico Nacional

Conclusion

Wheat cultivation assisted in early-state formation by reducing diverse food sources and subsistence practices of Indigenous peoples in favor of monoculture grain cultivation. James Scott's grain hypothesis of the rise of early states in Mesopotamia parallels the colonization of the Americas. Wheat was fundamental to early modern European ideas about identity, the body, and civilization itself. Colonizers believed wheat to be fundamental to their survival and to their successful colonization of the Americas. Colonizers coerced and enslaved Indigenous peoples and began a process of "terraforming" the landscape of Wallmapu and California, which intensified for both regions during the California Gold Rush. Simplification of the landscape impelled major environmental changes that disrupted previously-established relationships of consent and reciprocity with the land, and which impacted Indigenous cultures, health, self-determination, and food systems. Food, particularly (Ibid.). The Chilean wheat boom subsided in the early 1900s, and shortly thereafter, the barren wheat fields were replaced with monoculture *radiata* pine.

Chapter 3: Radiata Pine

Introduction

The Chilean wheat boom subsided in the early 1900s, and shortly thereafter, the barren wheat fields were replaced with monoculture *radiata* pine. The settler logic of "legibility" achieved through wheat cultivation is nearly identical to the logic behind the radical simplification of the forest, in fact, Scott (1998) explains "a simplified agriculture, which was developed earlier, served as a model of scientific forestry." This chapter will deepen the theoretical discussion of "state legibility" that began with wheat cultivation, to understand the role of pine monoculture in the colonization of Wallmapu. In the second section of this chapter, I will provide a brief historical overview of the displaced California-Native *radiata* pine, including its arrival in Chile at the turn of the 19th Century. The third section will describe the authoritarian neoliberal reforms that created the conditions for a "green rush" of radiata pine in south-central Chile. The fourth section will expand on the ecological, social, and cultural impacts of pine through qualitative data gathered from ethnographic fieldwork in 2013, as well as quantitative data from a range of scientific fields. The simplification of the landscape for settler control and profit has had dire consequences on *ixofil mognen* (life in all its forms) and biodiversity. The loss biodiversity in conjunction with climate change have resulted in catastrophic wildfires and severe droughts to which Mapuche communities in the ancestral homelands are vulnerable.

Settler Colonial Terraforming/ State Landscaping

Scott (2017) offers the term "state landscaping" to explain how the state maintained, amplified, and expanded the ecological setting that was fundamental to their power. This is similar to Dockry and Whyte's (2021) term "settler colonial terraforming" which they use to describe the rapid environmental changes that occurred as a result of colonialism. The introduction of monoculture wheat cultivation, and later, the introduction scientific forestry, provoked profound environmental changes in the Americas. Ecological changes introduced through colonization impacted Indigenous cultures, health, food systems, economies, governance, and their self-determination (Whyte 2017). The process of settler-colonial terraforming also disrupted relationships of consent and reciprocity that Indigenous peoples established with their human and non-human communities. Ultimately, as we will see in the subsequent chapters, these settler-induced environmental changes have intensified Indigenous peoples vulnerability to climate change (Ibid.).

The primary purpose of state landscaping is the reduction in diversity in an attempt to create a landscape that is easier to manage, measure, and assess. Scott remarks on the similarities of wheat and pine cultivation as both lend themselves to extensive large-scale farming and mechanization, "The logic behind the radical simplification of the field is almost precisely identical to the logic behind the radical simplification of the forest." (Scott 1998, 262). To increase wheat yields and profit, settlers had to reduce the diversity of food sources available to Indigenous peoples and force them into labor.

> In the monocropped field and single-species forest alike, the innumerable other members of the biotic community were ignored unless they had some direct bearing on the health and yield of the species to be harvested. Such narrowing of attention to a single outcome-invariably the one of most commercial or fiscal interest-confers an analytical power that allows foresters and agronomists to track carefully the influence of other factors on this

> single dependent variable. Within its ambit, there is no denying the extraordinary power of this approach to increase yields. (Ibid., 263)

Old-growth forests were dismembered and transformed into a uniform forest through clearing the underbrush, reducing the number of species, and planting in rows. Underlying the isolation of a monoculture for profit, Scott explains, is a poorly understood "set of relations and processes". In the absence of biodiversity, monoculture forests have deleterious effects on soil and water making them vulnerable to pests, effects which are often mitigated through the use of pesticides and artificial fertilizers.

Scientific forestry originated in Prussia and Saxony between 1765 to 1800, eventually becoming a hegemonic forest management technique throughout the world (Scott 1998). Its emergence, Scott explains, cannot be understood outside the larger context of centralized state-making initiatives of the time, which sought to make the landscape "legible" for control and for its "productionist goals"; "At the limit, the forest itself would not even have to be seen; it could be "read" accurately from the tables and maps in the forester's office..." (Ibid. 15). German scientific forestry was introduced in Chile in the early 1900s; the California-native *radiata* pine was proposed for commercial production and as a way to combat soil erosion following intensive wheat cultivation and deforestation from settlement.

As we will see later in this chapter, the establishment of scientific forestry and the proliferation of *radiata* pine were also accompanied by a reorganization of the newly conquered Mapuche territory through a process of "social engineering." Scott describes social engineering as the authoritarian attempts to redesign rural life and production following the creation of forestry science, "if one could reshape nature to design a more suitable forest, why not reshape society to create a more suitable population?" (Scott 1998, 92). The introduction and establishment of *radiata* pine monoculture is Chile mirrors the process of colonization of

Wallmapu, “the goal of the modern state is to reduce the chaotic, disorderly, constantly changing social reality beneath it to something more closely resembling the administrative grid of its observations.” (Ibid., 82). The homogenization and standardization of the landscape and rural Indigenous population were essential tools for control by an outside minority.

A Colonizing Pine

Currently endangered in its native habitat, it was a source of food and medicine for Ohlone and Salinan tribes (Anderson 2013, 280; Strike 1994). Low intensity fires were lit under it so that its cones would open with the heat and release pine nuts, the bark and needles were used for medicine. In the central coast of California, the tree is often crooked due to the salty winds coming from the ocean, crooked branches stretch out in every direction growing slowly with the ebb and flow of the land. Grown as monoculture in Chile it grows to maturity in a fraction of the time, straight, uniform, resembling rows of soldiers. Through no fault of its own, this pine has now become synonymous with colonialism, a military dictatorship, and neoliberalism in Chile.

Figure 11. Radiata pine in central California vs. a monoculture plantation in Chile

Source: left photo MScott Photography. Right photo: Timberindustrynews.com

Displaced from its native habitat, *radiata* pine behaves like a colonizer: invasive, ceaselessly extracting nutrients and water, often times rendering the soil inhospitable to native species. The increase of wildfires in Chile has given rise to ideal conditions for the invasion of the fire-loving pine (Gómez et al 2019) whose seeds spread and germinate as a result of fire, penetrating the already vulnerable fragmented native forests (Bustamante and Simonetti 2005). Pine is also accompanied by ectomycorrhizal fungi, without them they are unable to invade. Both disperse separately, these fungi can disperse to native forest soils and can persist for many years waiting for their pine hosts to arrive (Policelli et al 2020).

To borrow from Wolfe's (1999) theory of settler colonialism, the growing presence of *radiata* pine in Chile is part of a structure of invasion and is foundational to the continued expropriation of Mapuche territory. For many Mapuche, the pine is synonymous with colonization, a sentiment encapsulated in this poem by Leonel Lienlaf (2003), "I see uniforms in

the crowd and a flag flying over my grandmother's corpse./ I see armies of pine trees dancing over what remains of the stream,/ And armored trucks blowing dust on Kai Kai's dreams..." Scott's (1998) observations of regimented scientific forestry resonates with this militaristic metaphor. The plantation trees are "…measured, counted off, felled, and replaced by a new rank and file of lookalike conscripts. As an army, it was also designed hierarchically from above to fulfill a unique purpose and to be at the disposition of a single commander." (15). The "botanical colonization" of invasive species is central to human-induced climate change (Mastnak et al. 2014). Mapuche communities surrounded by *radiata* monoculture are some of the most vulnerable to the effects of climate change in Chile, Indigenous climate vulnerability cannot be analyzed without acknowledging the history and current practices of colonialism and capitalism on ancestral homelands (Whyte 2017). Following is a historical account of *radiata* pine in Chile, and its social, cultural, and ecological impacts.

Arrival and establishment of radiata pine in Chile

Due to a regional labor shortage on the frontier with Wallmapu, Chile began importing lumber from California, especially for ship building (Melillo 2015, 144); it is quite possible that radiata arrived in Chile as timber first, and later in seed form. Seeds of the pine first arrived in Chile during the late 1800s by way of France. It arrived in France through La Pérouse, who obtained the pine seeds in 1786 from friars at the Mission of San Carlos Borromeo in Carmel. The pine seeds were also brought to Britain by the Irish physician Thomas Coulter in the 1830s. Then in 1886, German settler and amateur botanist, Arturo Junge Sahr, imported them for his private garden in southern Chile on the frontier with Wallmapu. (Melillo 2015, 141).

In the early 1900s the Chilean government recruited German scientist Federico Albert for guidance to reforest and control the soil erosion that had been caused by the intensive cultivation of wheat and deforestation. Trained in German forestry principles, Albert prescribed Monterey pine as an efficient solution to soil loss, repeatedly referencing California as a model for Chilean environmental practices (Melillo 2015). *Radiata* pine began to be cultivated in various other Mediterranean-type ecosystems at that time, but nowhere did it proliferate as it did in Chile, where it grows to maturity in a fraction of the time it takes to grow in its native Pacific Northwest (Ibid., 143). Settlers on the frontier with Mapuche territory embraced the cultivation of pine as a move towards a more "civilized and productive forest" that would replace the "wild, uncivilized, sterile" native forest (Risopatrón in Kublock 2014).

Throughout the 20th century, *Radiata* pine expanded into infertile wheat fields, as well as in old growth forests that were cut down for logging. Shortly after its introduction, monoculture of the pine became essential to the construction and combustion of coal mines on the frontier Kublock 2014; Melillo 2015) Mining companies played a role in its initial proliferation, which displaced many of the region's farmers (Melillo 2015). A series of legal reforms in the early 1900s expanded the government's control over forest regulation, and the creation of tree plantations. Then, in 1931, a new forest law (Ley de Bosques) incentivized the harvesting of *radiata* pine plantation instead native forest. The founding of CORFO (Production Development Corporation of Chile) in 1939, also played a major role in developing the country's timber industry by providing credit guarantees and direct funding to forestry ventures (Kublock 2014; Melillo 2015). By the 1940s, pine plantations had become established in the region (Nahuelhal et al. 2012). The U.S. also provided support for the monoculture of radiata pine in Chile under the

1953 Plan Chillán, a U.S.-Chilean cooperative for rural development that encouraged the Chilean farmers to plant the tree for soil erosion.

Neoliberalism and a "Green Rush" of Pine[29]

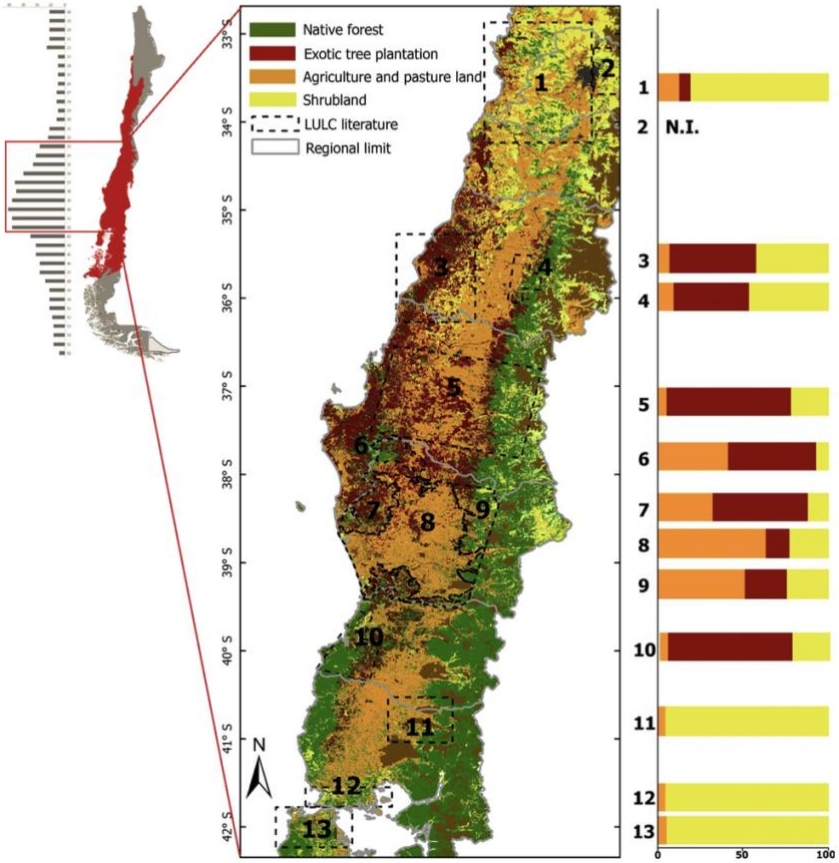
Chile was the first big experiment with neoliberal state formation, and is often touted as an example of successful economic restructuring throughout the world, an economic "miracle." Supporters of the neoliberal emergence in Chile claimed that free trade, privatization and deregulation would promote economic growth and development. Endorsed by the CIA, Pinochet's violent military coup in 1973 initiated the process of "freeing" the market. Under advising from Chilean economists from the University of Chicago, Pinochet enacted laws which privatized public assets, opened up natural resources to private exploitation and facilitated foreign direct investment and free trade (Harvey, 2006, p.147).

The neoliberal reforms unleashed a "green rush" of timber plantations. Through the enactment of the 1974 Decree Law (DL 701), the Chilean government expropriated 84% of Mapuche land (recovered during the previous agrarian reforms in the mid 20th century) and returned it to previous landowners, sold it to corporations, or gifted it to timber companies (Levil Chicahual 2006). Between the 1970s and early 1990s, DL 701 subsidized three of the largest timber companies, subsidizing 75%-90% of their operation costs (Haughney 2006, 165). One such company, the CMPC (Compañia Manufacturera de Papeles y Cartones), also received substantial investment by foreign investors such as the Simpson Paper company (now Green Diamond Resource Company) based on Yurok territory in Northern California[30]. Although

[29] This term has been widely used in Chilean media to describe the cultivation of pine, avocados, or marihuana.
[30] Simpson went on to sell their share of a Chilean pulp mill to the CMPC in 1997.

Chile's dictatorship ended in 1990, the succeeding democratic governments continued to extend the subsidies for large timber companies until 2012[31] (CONAF n.d.). Timber plantations (mostly *radiata* pine), have increased from 250,000 ha in 1974 to near 3 million ha in 2016 (González et al 2018).

Figure 12. Geographical distribution of the main land covers, richness of tree species, and percentage of change from native forest to other land covers.



Source: Miranda 2017

[31] In 1998, Law 19,561 modified DL 701 to include subsidies for owners of small to mid-size plantations.

The majority of timber plantations are concentrated in ancestral Mapuche territory (Fig. 12). The Chilean regions of Bío Bío, La Araucanía, Los Ríos and Los Lagos are part of ancestral Mapuche homelands, these regions also have the greatest concentration of exotic tree plantations, with a total of 1,559,185 hectares. Bío Bío has 878,970 hectares of plantations, La Araucanía has the second highest coverage, with 589,000 hectares (Millaman et al. 2016). Haughney (2006) notes that from the ideological perspective of the neoliberal regime, the protection of Mapuche *reducciones* presented an obstacle for national economic growth. Furthermore, the Mapuche history of takeovers and claims to ethnic rights constituted a threat to national security as well as a threat to property rights. The regime intended to bring about both national integration and economic development through the imposition of individual property rights and expansion of capitalist production on Mapuche territory (Ibid., p.51). Through a process of allotment similar to what occurred on Native American reservations after the 1887 Dawes Act, Mapuche "reducciones" were privatized and subdivided in 1978[32]. Land that had once been communal, such as forests, pastures, and ceremonial sites, was granted to Mapuche individuals. Once allocated the land title, the Mapuche individual lost their Indigenous title. They now had to face the free market as a small farmer, with few options for subsistence other than attempting to live off their small plot of land or selling it off to work for someone else (Ibid., p.152). In the end, the dictatorship divided approximately 2,000 communities—only about 100 were left undivided (Palomino-Schalscha, 2011). Legal reforms also sought to homogenize the population, rendering Indigenous people invisible and invalidating their claims to territory that might create a barrier to economic growth. An official document from this time reveals that Mapuche were labeled as

[32] Decree Law 2568

"marginalized peasants," and recommended policies for their integration (Haughney, 2006, p.56):

> *It is not possible to establish that there exists a sector of society in Chile today which is Indigenous, not only because it is materially impossible to distinguish [such a group], but also because such a distinction is an affront to the fundamental values of nationality […] Today there are no Indigenous people, [and] the law cannot establish such discrimination* [33].

This policy of integration is akin to Scott's description of the "social engineering" that followed from forest engineering. He asserts that "the working poor" (which include rural Indigenous populations), were the first subjects of scientific social planning. As in the "unimproved" forest, the existing patterns of settlement and social life in Wallmapu were illegible and resistant to the narrow purposes of the state. The privatization of Mapuche lands and legal erasure of Indigeneity are an inherently authoritarian form of "social engineering" which simplified the settlement pattern of Mapuche and made the rural population better objects of political control. "If…the state is ambitious—if it wants to extract as much grain and manpower as it can… if it wants everyone to speak the same language or worship the same god—then it will have to become both far more knowledgeable and far more intrusive." (Scott 1998, 184). In addition to legal reforms, the dictatorship also employed violence, repression and surveillance. Political activity was banned, and Mapuche organizations, along with unions, leftists and grassroots parties were dismantled. The introduction of neoliberalism in Chile was a process of social and economic engineering to "free the market," which paradoxically, could not be done without authoritarianism and coercion.

By the end of the dictatorship the high poverty levels among rural Mapuche led to increased migration into urban areas. Yet despite ethnocide and urbanization, many Mapuche did

[33] 1978 document from State agency for Agricultural and Livestock Development (INDAP). (Haughney, 2006)

not cease to recognize themselves as Mapuche and as different from the Chileans. Many maintained their sense of identity whether born and raised in the rural community or living in urban areas (Haughney, 2006, p.24). Throughout the dictatorship Mapuche formed networks of support from local, national and international actors such as NGOs, churches, peasant movements and Mapuche living in exile. Through these networks they created "cultural centers" that united under the umbrella of *Ad Mapu* in 1980, considered the first and probably most important Mapuche organization that arose during the dictatorship (Palomino-Schalscha, 2011; Levil Chicahual, 2006). Mapuche activists were also actively involved in struggles to end the dictatorship.

Neoliberal Multiculturalism

The Governments of the "Concertación"[34] that replaced the Pinochet dictatorship in 1990 maintained the neoliberal paradigm introduced under Pinochet. Unlike the Pinochet regime, however, these governments have been open to social issues and participation leading to a more inclusive, "multicultural" neoliberalism embracing diversity and participation as necessary for development and productivity (Hale, 2002). This new cooptive approach was influenced by the 1989 agreement "Acuerdo de Nueva Imperial," signed by Mapuche organizations and then presidential candidate for the Concertación, Patricio Aylwin. In the agreement, the state officials acknowledged important demands made by Indigenous organizations and made a commitment to solve them. These demands included land claims, the recognition of Indigenous peoples and rights in the Chilean Constitution, the creation of laws, policies and institutions to deal with

[34] "Concertación de Partidos por la Democracia" is the coalition of center-left political parties that united to end Pinochet's dictatorship. They maintained power from 1990-2010 with four elected presidents.

Indigenous matters, and to ratify international treaties such as the ILO Convention 169[35] (Palomino-Schalscha, 2011).

Subsequently, the Chilean state did not fully follow through with this agreement and laws such as the "Indigenous Law" of 1993 left out many important Indigenous demands. While this law acknowledged Indigenous peoples' rights to land, language, culture and development, it disregarded traditional organizations, political rights (such as autonomy, self- management and justice system), and territorial rights (Aylwin 2009). This law also created the CONADI, "Corporación Nacional de Desarrollo Indígena" (National Corporation for Indigenous Peoples' Development), the "Fondo de Tierras y Aguas" (Lands and Waters Fund) to buy lands and water rights for Indigenous communities and individuals, and the ADI, "Areas de Desarrollo Indígena" (Indigenous Development Areas). Although initially promising, these reforms and organizations are proving to be inconsistent and contradictory to Mapuche demands.

Drawing from Hale's (2002) work on neoliberal multiculturalism, Palomino-Schalscha (2011) outlines contradictions of multiculturalism in Chile. Among these is the predominance of capital investment over Indigenous rights. Hale (2002) asserts that multiculturalism emerges from neoliberalism; as David Reiff (1993) notes, capitalism is multiculturalism's "silent partner," as it allows for the exploitation of cultural groups as new niche markets. Economic globalization and the market are key factors in defining the priorities and policies of multicultural states. As such, Indigenous peoples' rights are subjected to economic interests and acknowledged only insofar as they do not challenge them (Hale, 2004). In the Chilean context,

[35] The International Labor Organization Convention 169 was ratified in Chile in 2008. It states that governments have the responsibility for coordinating and organizing action to protect the rights of Indigenous and tribal peoples and ensure that the right mechanisms and resources are available. The content of ILO Convention 169 corresponds to that of the UNDRIP.

this is reflected through continued government support of large investment projects on Indigenous territory that have serious social, cultural and environmental impacts, without prior consent of the local communities (Aylwin, 2009).

Furthermore, the state has implemented policies and programs that promote an "authorized" version of Indigenous people, encouraging "neoliberal values" such as entrepreneurship, self-help, individual land titles, and the inclusion of Indigenous peoples' culture in the market as a "resource" (Palomino-Schalscha 2011). Hale (2002) and Richards (2013) have linked neoliberal multiculturalism to "the creation of subjects who govern themselves in accordance with the logic of globalized capitalism." (Richards, 2013, p.102). The term "indio permitido" (authorized indian), coined by Silvia Rivera Cusicanqui (Richards, 2013; Hale and Millamán, 2006) depicts the subject position of Mapuche who are rewarded for internalizing the demands of the state. The others, what we might call the "insurrectos" (insurrectionary Indians), are excluded, marginalized, or criminalized. These inclusionary multicultural reforms have served to further spread the neoliberal model and "tame differences." The case of "Fundo"[36] California, Chile, illustrates this point.

"Fundo" California

The dirt roads and deep green fields leading up to "Fundo" California[37] do not indicate the presence of a community nearby. Perhaps because it is winter there are no signs of agriculture. As we near the community, we see sheep standing idly by and small pigs with their noses to the ground with wooden triangles around their necks to keep them from going through

[36] A "fundo" is a medium to large scale farm.
[37] It was purchased from cattle rancher Juan Carlos Mordstadt in 2000.

the fence. In the distance, empty barns sit dilapidated on green expansive hills. The beams and infrastructure of the barns are exposed as the outside walls have been stripped for firewood. Along with several houses, the barns are all that is left of what used to be one of the most productive dairy farms in the 9th region of southern Chile. In the year 2000, the National Corporation for Indigenous Development (CONADI) bought the dairy farm and surrounding land for the Mapuche *lof* (community) Antonio Ñirripil, of approximately 120 people who were displaced by pine plantations in Traiguén, north of the Araucanía. This was the first of many Mapuche communities to receive land from the CONADI. In the past thirteen years, these communities have faced criticism from the government and media for lacking desire to produce commercially. According to some accounts, Mapuche have used only 5% of 71 thousand hectares transferred to them for productive agriculture. Government and media characterize these lands as "lost," because they are no longer commercially productive. A newspaper clipping from "El Mercurio" in the year 2002 (Fig. 13), sums up this viewpoint. Underneath an image of "Fundo" California, the caption reads:

> *71 thousand hectares of land transferred to Mapuche ceased to be commercially productive.*
>
> *85% of the lots of land handed over to the Indigenous of the ninth region by CONADI, have no irrigation or drinking water. Special plans aim to incorporate these 10,000 hectares into the productive sphere. In "Fundo" California in Toltén, handed over to the Antonio Ñirripil community in the year 2000, the infrastructure is almost destroyed. Mapuche leader José Nain[38] estimated that only 5% of the land received was worked,*

[38] At the time, José Nain was a leader in the Mapuche organization "Consejo de Todas Las Tierras," *Aukiñ Wallmapu Ngulam* (All Lands Council). It is worth mentioning here that several Mapuche I spoke to echoed Chilean critiques of unproductive or 'lazy' Mapuche, perhaps a manifestation of internalized racism.

and the rest has not due to lack of support or because "they don't make the effort to get ahead."

Figure 13. Newspaper clipping from "El Mercurio." June 8, 2002.

I visited "Fundo" California in 2013 with Roberto (pseudonym), a CONADI representative from the municipality of Pitrufquén. At the time, I did not know that the name *Fundo California* originated from a period when Chilean colonization of the Araucanía was driven by the desire to create a "New California". On our trip to the community he related the lessons that CONADI learned through working with the community Antonio Ñirripil; mainly that the state needed to train communities to occupy the land productively, through large-scale

agriculture, dairy farms, small-scale pine plantations, and other businesses beneficial to the Chilean economy. In the past decade, several organizations and programs have been created to provide technical assistance for Mapuche communities with "newly acquired properties," so that "the funds are not 'mismanaged'" (interview, 2013). My visit to "Fundo" California and conversations with CONADI representatives revealed the ideological framework that shapes state policies towards rural Mapuche.[39]

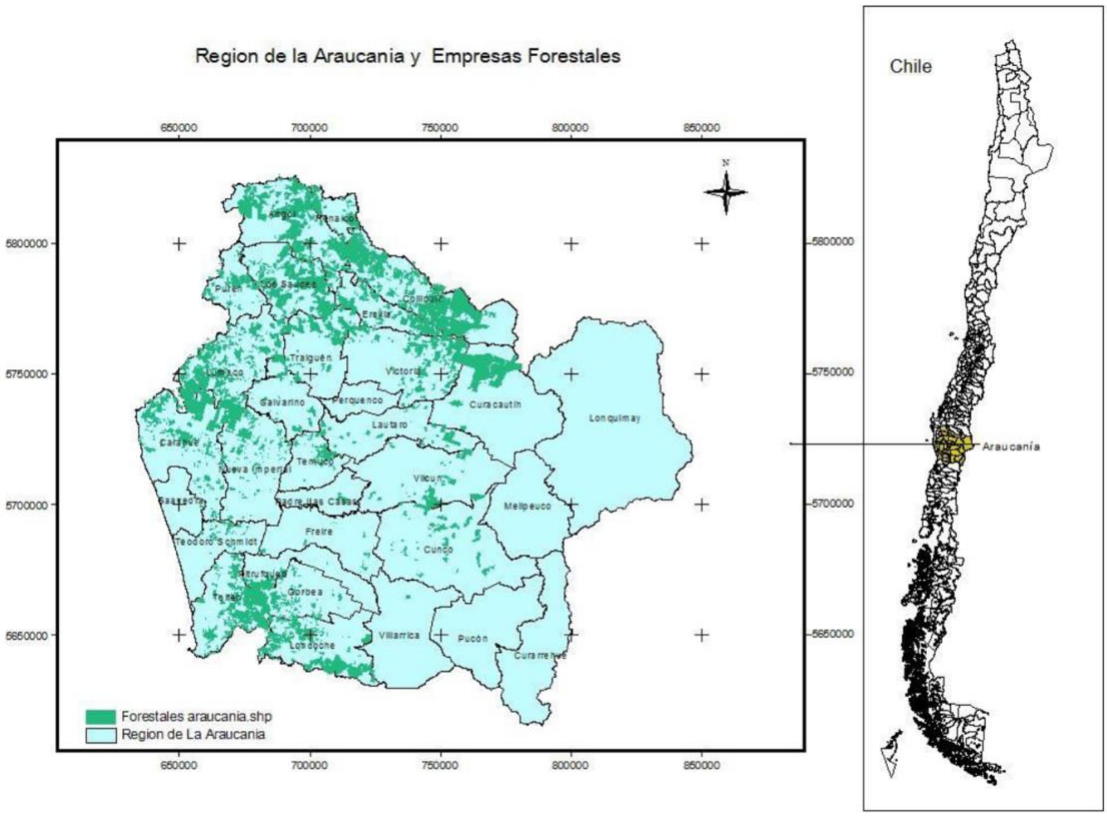
Ecological, social, and cultural impacts of *radiata* Pine Monoculture

Over a three week period in early 2017, Chile experienced its most devastating wildfires in recent history. Nearly 520,000 hectares (approximately 1,300,000 acres) burned, whole towns were engulfed in flames, over 7,000 of people were directly affected (Van Hensbergen and Cedergren 2021; CONAF 2017). The monoculture plantations of *radiata* pine have played a major role in creating the conditions that led to the severity of this so-called "mega fire." A significant body of research associates the expansion of *radiata* pine plantations to increased fire hazard in south-central Chile (González et al. 2011 and 2018; Díaz-Hormazábal and González 2016; Pauchard et al. 2008; Peña-Fernández and Valenzuela-Palma 2004). Monoculture pine plantations not only reduce biodiversity but create flammable landscapes that act synergistically with climate change to create larger wildfires and longer fire seasons (Díaz-Hormazábal and González 2016). These plantations now cover approximately 21.2% of the land in my home region of La Araucanía (INFOR 2020), so it comes as no surprise that during the 2019-2020 fire

[39] Much has changed since my visit. In 2017, the community formed an agricultural cooperative dedicated to cheese manufacturing. They have since renamed themselves from *Fundo California* to *Cooperativa Agricola Ñirripil*.

season this region had the largest area destroyed by fire in the country, an increase of almost 50% from the previous fire season (Díaz 2020, CONAF 2020).

Fig 14. Forestry companies in the Araucanía 2016



Source: Hale et al. 2016

Timber plantations (mostly *radiata* pine), have increased from 250,000 ha in 1974 to near 3 million ha in 2016 (González et al 2018). Plantations were often established on second-growth native forests that were deemed "unproductive" (Haughney 2006, 167), presenting the greatest threat to the temperate rainforests located in the southern regions of the country (35◦–42◦ S), considered to be one of the world's top 35 biodiversity hotspots (Gonzales et al. 2011; Nahuelhal

et al. 2012; Echeverría et al. 2006; Miranda 2017). To make matters worse, these landscape change processes have been largely unregulated (Nahuelhal et al. 2012). In addition to loss of biodiversity and species loss, pine plantations also affect hydrological processes, soil quality and land cover, creating desert-like conditions that act synergistically with climate change to increase fire risk. An increasing amount of wildfires originate in *radiata* pine plantations (Gonzalez et al. 2011, Díaz-Hormazábal and González 2016). Fast-growing pine consume more water than native forests, drying up aquifers, the pine canopy intercepts rainfall and their needles retain rain water which then evaporates before hitting the soil (Huber et. al 2008). Furthermore, the Chilean model of water rights make it a challenge for local communities to claim access to water over private firms, even if instances where communities historically had access to local sources (Bauer 2005).

Pine also acidifies the soil, making it uninhabitable for the native shrubs and plants that would otherwise retain soil humidity, this creates favorable conditions for other invasive species that increase fuel load (Pauchard 2008). Remaining groundwater and streams are contaminated by the indiscriminate use of pesticides and fungicides regularly sprayed on the trees and the surrounding communities with deleterious effects on people, crops, medicinal plants and livestock (Richards 2013, 78; Kublock 2014, 257; Montalba-Navarro et al. 2005). The *werkén* (messenger) of an affected community explains:

> Plantations have done away with Mapuche cosmovision, our *machi* are in conflict with forest plantations because they no longer have places to gather our medicinal plants. Very soon the Chileans will also suffer because our underground water is drying out [...] In the 1980s we rarely saw pine and eucalyptus, now you look around and it's full of them […] this is a big problem for all of us involved. Chilean society has to join our cause. (Fieldnotes 2013)

Mapuche communities near forest plantations are disproportionately affected by the environmental consequences of monoculture and have little to no legal protection. Communities have witnessed the disappearance of species, medicinal plants, water, and ways of life, the loss

of biodiversity amounts to a cultural loss: when species become endangered or extinct, so does language, specific knowledges and cultural practices tied to them (Montalba Navarro et al. 2005; Haughney 2006; Richards 2013). Water scarcity and toxicity from pesticides creates a challenge for subsistence farming, driving people from their homes or limiting their economic opportunities so that they are inclined to grow timber in order to make ends meet (Haughney 2006; Richards 2013; Kublock 2014). Touted for its economic success, the Chilean model for incentivizing plantations has been replicated throughout Latin America (Haltia and Keipi 1997; Lara and Veblen 1994). However, researchers have found a robust empirical correlation between plantation expansion and higher levels of poverty (Andersson et al. 2016, 126; Millaman et al. 2016). The forestry sector that operates on Mapuche territory annually exports over 5 billion dollars (Donoso and Romero 2020), yet this region remains the poorest in the country, with 17% of the population living in poverty (CASEN 2017).

Movements for Autonomy and Land Defense

In the 1990s, Mapuche movements for autonomy began to unfold in a supranational effort to recover and defend ancestral territory. Various organizations have formed over the past decades, with diverse strategies and goals that range from re-working state institutions to rejecting them altogether (Pairicán 2016). Conflicts with timber companies have been characterized by symbolic occupations of timber plantations, marches, and hunger strikes. Demonstrations often escalate as a result of Chilean police intervention on behalf of the timber companies (Richards 2013) police raids in rural communities, violence against children, and the deaths, incarceration and persecution of Mapuche leaders branded as "terrorists" are all too common (Richards 2010). A member of a militarized community explains,

> One hundred and thirty years we have been subjected to the state. They say we are lazy, that we are drunks […] that is how they justify taking our lands. Our entire rural sector is militarized, there are many police. Young people are uprising in hatred of police because they don't respect human rights […] There have been instances where justice worked in our favor, but still, only Mapuche are tried under the terrorist law. (Fieldnotes 2013).

Originally introduced under Pinochet's military dictatorship in 1984, antiterrorist legislation was employed to confront the growing opposition of leftist groups (HRW 2004). In 2002, the government reintroduced the antiterrorist law, sanctioning state-violence against Mapuche land defenders (Richards 2010). The law has several legal implications including the use of protected or "faceless" witnesses, increased power to issue warrants to seize the accused's property, the authorization of longer sentences, and the treatment of crimes against property as terrorism[40] (crimes against property are not considered terrorism in international treaties) (Richards 2013; HRW 2004). Ben Emmerson, UN Special Rapporteur on Human Rights and counter-terrorism, urged Chilean authorities to refrain from applying the law in 2013 maintaining that "the anti-terrorism legislation has been disproportionately and unfairly applied against Mapuche defendants, and has been implemented without a coherent policy for distinguishing those cases that meet the threshold test for an act of terrorism and those that do not."[41]

Unsurprisingly, public officials such as Minister of Domestic Policy, Mario Fernández, and right-wing presidential candidate, José Antonio Kast, made baseless accusation blaming Mapuche "terrorists" for the 2017 mega fire[42]. Others have assigned blame to timber companies, as journalists revealed that areas affected by the mega fire coincide with plantations that had been quarantined for years due to an uncontrollable pest problem, and that insurance companies

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[40] Similarly, Grandia (2012) points out that standardization and enclosure of land required criminalization and denigration of Indigenous land uses.
[41] Accessed on 1/13/2014 from http://www.ohchr.org
[42] https://www.eldinamo.cl/nacional/2017/04/28/kast-revive-teoria-de-la-tormenta-de-fuego-y-culpa-a-terroristas-de-incendios-forestales/

do not cover damage by pests but do cover for damage by fire (Red Defensa Territorios 2017, Seguel 2017). Despite appeals by concerned citizens, the Public Prosecutor dismissed the possibility of investigating timber companies. Substantial evidence has been presented to expose other cases of arson and destruction of private property as self-attacks, in some cases the perpetrators are guards of the forest plantations or police collaborators (Seguel 2018).

Pine Monoculture Expansion and Climate Change in Chile

Monoproduction of *radiata* pine is no longer sustainable in south-central Chile (González et al. 2018,), yet the government's current definition of "forest" will permit the continued expansion of exotic tree plantations for climate change mitigation efforts (Durán and Barbosa 2019; Gonzáles-Farfán 2019). In 2019, the reintroduction of plantation subsidies under DL 701 was proposed as a central implementation mechanism for meeting Chile's reforestation commitments under the 2015 Paris Agreement on climate, and for meeting their goal of becoming carbon neutral by 2050 under Chile's emergent Framework Law on Climate Change (Heilmayr et al. 2020; Guerra 2019). However, Heilmayr et al. (2020) note that while subsidies have increased the area covered by trees, they have ultimately failed to increase carbon storage and resulted in loss of native forest and biodiversity. Millaman et al. (2016) indicate that FSC certification processes in Chile also enable *radiata* plantation expansion, despite the fact that two of Chile's largest FSC-certified plantations and conglomerates, Forestal Arauco and Forestal Mininco, do not meet the commitments to Indigenous peoples and the environment outlined in Principles 3 and 6 of the FSC standards. The continued expansion of monoculture *radiata* pine in south-central Chile under the guise of carbon sequestration is unlikely to contribute to climate change mitigation and adaptation efforts, but it will contribute to increased vulnerability of rural

populations and Indigenous peoples. Furthermore, Indigenous peoples were not included or consulted in the creation of the most recent Chilean Climate Change bill (Biskupovic et al. 2020); this omission denies the rights and interests of Indigenous peoples in Chile to protect their ecosystems and ways of life (Millaleo 2020).

Conclusion

Monoculture of the California-native *radiata* pine was introduced in Chile to combat soil erosion following centuries of deforestation for European and Chilean settlement and intensive wheat cultivation. The joint processes of forestry and social engineering intensified the dispossession of Mapuche, the loss of native forest, and the establishment of *radiata* pine monoculture. Movements for autonomy have emerged in defense and recovery of the land, Mapuche land defenders face the double threat of criminalization by the Chilean state, and dispossession by encroaching extractive industries. A mounting body of scientific data reveals a grim future for the country if *radiata* pine continues to proliferate without regulation. The loss biodiversity in conjunction with climate change have resulted in catastrophic wildfires and severe droughts to which Mapuche communities in the ancestral homelands are most vulnerable; however, this story does not end in tragedy and loss. In the following and final chapter I will discuss how the restoration of reciprocal relations can mitigate the damage of colonialism in Wallmapu.

Chapter 4: A Roadmap to Relationality

Introduction

Among many other invasive species, the introduction of wheat and *radiata* pine via colonialism/ capitalism, dramatically transformed the coastal landscapes of Chile and Californai and disrupted the reciprocal relations the original peoples had established with their lands. The following chapter develops a theoretical argument for "renewing relatives" to borrow the term from Kyle Powys Whyte (2017). The restoration of reciprocal relationships with our kin and the creation of "new relatives" are fundamental to building a mass counterhegemonic movement capable of building vibrant futures (Yazzie and Baldy 2018). In light of our interconnected histories of colonization, this chapter argues for building solidarity among Mapuche and California Native homelands and communities.

The integration of Indigenous knowledge systems, across the hemisphere and across the disciplines, is fundamental to climate change mitigation and adaptation. Mapuche communities surrounded by *radiata* pine plantations are some of most vulnerable to the unfolding effects of climate change in Chile, yet their experiences and knowledges are frequently excluded from mitigation and adaptation efforts. As shown by innovative efforts in California that are showing newfound respect for the resource stewardship of California Indians, the inclusion of Indigenous peoples in other place like Chile could be transformative for future research and policies geared towards restoring native forests and mitigating the effects of climate change. California's example could provide a valuable reference for integrating knowledge systems, particularly in the management of wildfire.

For Mapuche, reciprocal relationships with the land, *ixofillmongen*, are maintained through the legal system of *az mapu*. In order to restore *az mapu*, Mapuche need governance

over the ancestral territory. A comprehensive response to climate change has to include territorial restitution, starting with the land that was expropriated for timber plantations in south-central Chile during the Pinochet dictatorship. Territorial restitution will provide avenues for the creation of new forestry models that increase carbon capture, advance food sovereignty, and increase the recovery of language and culture in a process that Kimmerer (2011) calls "reciprocal restoration."

A Relational Approach

Indigenous epistemologies are generally characterized by a holistic or relational framework that stresses relations and processes (Luis 2006; Deloria 1973; Blaser et. al, 2010; Goeman 2013; Shaw et. al, 2006). Relationality is the foundation of Indigenous cosmologies (Alfred 1999; Deloria 1999).

> Indigenous knowledges are built upon relationships—with oneself; with one's family, community, or nation; with other nations; and with the other-than-human […] These relationships are not limited space, place, or time. They are spiritual, often extending back to ancestors and into the future to those yet born. The scope of Indigenous knowledges is therefore enormous and challenges modern distinctions between nature and society and brings into view the intricate web of relations that constitute all that is known. (Blaser et al. 2010, 8).

Relationality means that one experiences the self as part of others and that others are a part of the self (Moreton-Robinson 2000); it is a theory of life that underscores multispatial, multitemporal, and multispecies relationships maintained through respect and reciprocity. Native American and Indigenous scholars make the case for restoring relationships that were severed through colonialism as fundamental to addressing climate change and environmental degradation, as well as creating new relationships to support Indigenous peoples' mobilizing in response to climate change. (Kimmerer 2011; Whyte 2017; Yazzie and Baldy 2018; Middleton 2015). Drawing on

these principles of "radical relationality," "renewing relatives," and "reciprocal restoration," I view the intertwined histories of Mapuche and California Native homelands as a starting point for forging new hemispheric relations in response to climate change and wildfire management.

Whyte (2017) argues for "renewing relatives," the process of creating new relationships and restoring ancestral relationships with human and non-human relatives. New relations, he asserts, will strengthen self-determination and support mobilizing to address climate change. Similarly, Yazzie and Baldy (2018) conceive of "radical relationality," a deeply intersectional vision of collective political organization for *interconnecting* variously scaled decolonial practices across nations. Like our waters, they suggest, we are meant to connect across nations, continents, and arbitrarily-drawn borders; we are meant to work, sustain, and support each other. Radical relationality is a move away from what Tuck (2009) terms "damage-centered research"; it is a praxis of decolonization for building alternative futures (Ibid.). Radical relationality requires that we make "new relatives" beyond the web of relations that comprises life in each of nation: "to build the kind of mass movements that are necessary for staging a serious counterhegemonic challenge to the status quo of death that currently structures our existence." (3). They ask,

> How can we conceive of, and build, connections between the ontology of decolonization (i.e. radical relationality) that emerges from this specific place, and ontologies of decolonization elsewhere? How can we look to radical relationality and water view as a guide for our relationship-making with other nations?

In an effort to build solidarity across the hemisphere, the following section makes a case for a hemispheric approach to Native American Studies, highlighting some of the major differences and commonalities among movements for self-determination and decolonization.

A Hemispheric Approach

Changes brought about through interconnected processes of colonialism, neoliberalism, U.S. imperialism, and climate change, have made it imperative for Native American and Indigenous Studies to reconstruct a hemispheric and relational perspective. Initially, the main goal of the discipline was to defend Indigenous nationhood in the U.S., however, scholars are now interrogating and decentering these discourses to account for the worldwide shifts that have taken place since its inception nearly fifty years ago. A hemispheric framework considers how different modes of colonialism have shaped contemporary Indigenous experiences and how capitalism, or more precisely neoliberalism, has materialized differently throughout the Americas (Altamirano-Jiménez 2013, 11). It also emphasizes the shared experiences of Indigenous peoples and fosters collaborative interventions in the context of globalization and the forced displacement of Indigenous peoples linked to the implementation of neoliberal policies, climate change, and US political intervention. Blaser et al. note that Indigenous peoples have developed global collaborative arrangements among themselves and with non-Indigenous social movements that "articulate the contours of an alternative globalization" (2010, 14). Similarly, Forbes et al. note that the forced migration resulting from globalization have not weakened ethnic boundaries and cultural identities but rather have intensified ethnic allegiances (2002, 103). Rather than homogenize, a hemispheric approach makes a case for pluriversality[43], the idea that our "mutual survival depends on respect for mutual difference" (Blaser et al. 2010, 21). This is similar to the

[43] In their discussion of Indigenous movements for autonomy in Latin America, Blaser et al. place emphasis on pluriversalism as opposed to universalism, on dialogue, negotiation, and coexistence between contrasting visions and projects that are replacing the universal imposition of [one] modernity' (21).

Zapatista understanding of "a world where many worlds exist" or the Mapuche concept of *ixofillmongen*.

> Because the conditions of Native peoples are inextricably linked to the conditions facing other oppressed groups, a different political imaginary would require an engagement with intellectual work from these other sites of struggle in order to build stronger intellectual and political solidarities. Similarly, other fields of thought dedicated to social transformation will be strengthened if they more critically engage with Native studies and its investments in ending settler colonialism. (Simpson and Smith 2014, 11)

Key to a hemispheric approach that eschews intellectual or geographic isolationism, is a shift away from seeking recognition from those in power to creating coalitions with those interested in changing power relations. Glen Coulthard (2014) asserts that politics of recognition can pit communities against each other and cement, rather than questions, the legitimacy of the settler state. In the same vein, Dian Million (2014) reminds us that theories have the power to reorganize boundaries, and offers a "theory of Indigenism," a horizontal and internal strategy "to rebuild Indigenous social relations across hemispheres that are not merely reactive to any nation-state's embrace" (39). Diana Taylor (2003) calls for scholars to "remap the Americas," decentering U.S. America for a hemispheric Americas. A hemispheric perspective, she argues, emphasizes interconnectedness and would expand the restrictive paradigms introduced by colonialism and imperialism. By exploring the histories of the north and south as intertwined, a hemispheric perspective problematizes the spatial and temporal framework that fixes Indigenous lives into nation-states and linear histories, creating coalitions across borders. Forbes et al. previously recognized this: "As Native American studies has matured, many of us in the field have realized that it is foolish to divide up our peoples in a colonial way" (2002, 98). Forbes (1980) reflects on the transient nature of colonial boundaries,

> I want to relate our seeking of intellectual sovereignty to Native Studies, beginning with the need for a hemispheric approach to Indigenous peoples. When we begin to decolonize our minds, which is what sovereignty is all about, I think we can see that boundaries and

> colonial structures created by the European invaders are, first, transient and, second, barriers to our self-determination. If we were speaking about Native intellectual work in 1745 or 1783 or 1867, the colonial boundaries would be radically different. They may also be different in 2050 (Forbes 1980, 16)!

For Forbes, a hemispheric approach is intrinsic to decolonization. National boundaries should not be naturalized, but rather, seen as barriers to self-determination.

Boundaries have always been transient—Indigenous scholars interrogate essentialist definitions of Indigenous peoples that fix them temporally and spatially, overlooking their mobility and the impact of forced displacement (Goeman 2013; Altamirano-Jiménez 2013; and Ramirez (2007). Ramirez (2007) offers the concept of "Native hubs," physical or virtual gathering places, to understand how native peoples construct identities and communities beyond geographic belonging. In the absence of land-based forms of government, hubs are spaces where Native Americans can work towards self-determination and sovereignty and voice cultural claims (81). The act of hub-making within the urban environment demonstrates that Native Americans bring their own senses of culture, community, identity, belonging, and rootedness with them as they travel (12). Ramirez's work articulates a methodology similar to such as Anzaldúa's (1987) "border thinking" or Denzin et al.'s (2008) "borderland epistemology" that help resist efforts to limit research to a single paradigm or practice and aim to heal the rifts created by colonialism.

Scholars such as Goeman (2013), Coulthard (2014), and Alfred (2005), critique Native nation-building efforts that replicate the paradigm of settler societies, stressing the importance of refocusing Native nation-building efforts beyond settler models of territory, jurisdiction, borders, and race. Similarly, Mapuche scholar José Mariman (1990) views nation-building efforts among some Mapuche movements as "anachronistic essentialism." He critiques the idea that land and

territorial origin are essential to Mapuche identity and maintains that the return to traditional culture is a "mere illusion." Culture is dynamic, years of colonization and urbanization have shaped Mapuche culture and as such, there is no true Mapuche "essence." Scholars such as Alfred (2005), however, characterize Indigenous identity as a sort of strategic essentialism, multi-faceted and flexible, but also grounded in Indigenous culture. Nation-building efforts are expressed through the distinct projects of sovereignty and autonomy.

Few scholars have theorized the distinction between claims for autonomy in Latin America and sovereignty in the U.S. and Canada. Altamirano-Jiménez (2013) notes that Central and South American Indigenous movements tend to focus on discourses of political autonomy, democracy, and human rights while North American movements focus on sovereignty, treaties, and self-determination. She makes a distinction between settler and extractive (exploitative) colonialism to explain how these unique demands have unfolded. Like Altamirano-Jimenez, Castellanos et al. (2012) explain how US and Canadian governments recognized native tribes as distinct political entities with executive, legislative, and judicial powers. In absence of these arrangements, Indigenous peoples in Latin America have fought for right to self-governance and self-determination, autonomous from their nation-states. Scholars such as Bomberry (2012) assert that sovereignty claims in the U.S. are shaped by the racial politics of blood quantum and apartheid conditions that allowed Indian nations to be preserved, while the racial politics of *mestizaje* in Latin America bear influence on claims for autonomy. De la Cadena and Starn (2007) and Castellanos et al. (2012) have noted the growing trend of claims to Indigenous and *mestizo/a* identity. This resurgence parallels the rise of movements for autonomy and speaks to the desire to recognize multiracial and multicultural identities.

Sovereignty

Barker (2005) argues that there is no fixed definition for sovereignty, as it is historically contingent, embedded within social relations which have given it meaning (21). According to Vine Deloria, Jr. (1979) the term sovereignty has roots in early east Asian and European discourses. Originally a theological term, it was adapted by European political thinkers to describe the absolute power of the King as a divine right. Barker describes how the term evolved through political and theological debates about what constituted the nation, ultimately influencing how Europeans colonized others. Treaties became instrumental in asserting nationhood and recognizing the other's status as a nation. Barker argues that in the colonization of North America, these treaties were less about recognizing the sovereignty of Indigenous nations than they were about asserting the colonizer's status as the more powerful sovereign, "given the fact that every single treaty signed with Indigenous peoples in the Americas and the Pacific was broken, it would seem to be so" (5). The inherent paradox in treaty-making is that colonizers deemed Indigenous peoples unworthy of rights on the grounds that they "lacked proper civility or belief in God" (6). Anishinaabe intellectual Lawrence Gross (2016) posits that there are no Native American tribes that until now have been able to maintain unabridged sovereignty (33). Sovereignty has been rearticulated within Indigenous scholarship and activism following WWII (Barker 17). It became central to Indigenous agendas for social change and Indigenous representation in the face of dominant US American ideologies, and it was strategically used to make claims to rights to self-government, territory, and cultural autonomy.

Sovereignty plays a key role in the defense of land and culture from the continued exploitation enabled by globalization processes, however, this approach is not without criticism. Coulthard (2014) argues that "recognition" of tribal sovereignty by the settler state and

"reconciliation" amount to little more than assimilation; both words are code for colonial control and the advancement of the colonial project. Similarly, Alfred (2005) acknowledges that the framework of sovereignty is unable to fully capture Indigenous epistemologies about law, governance and culture; furthermore, it fails to interrogate the ideological basis of the settler state.

> Few people have questioned how a European term and idea—sovereignty is certainly not Sioux, Salish, or Iroquoian in origin—came to be so embedded and important to cultures that had their own systems of government since the time before the term *sovereignty* was invented in Europe. Fewer still have questioned the implications of adopting the European notion of power and governance and using it to structure the postcolonial systems that are being negotiated and implemented within Indigenous communities today (39).

In his book *Peace, Power, Righteousness* (1999) Alfred proposes a turn to Indigenous epistemologies, traditional values, and languages to create a governance strategy that is not contingent upon a Western model of governance (19). Similarly, Gross (2003) questions whether sovereignty would have any functional significance without Indigenous culture, and reinforces the need for a cultural sovereignty rooted in Indigenous religion and language. These critiques of sovereignty in the Northern hemisphere resonate with demands for autonomy made by Indigenous movements in the Southern hemisphere.

Autonomy

Movements for autonomy gained prominence during the 1990s, although many Indigenous communities had already established autonomous systems such as in the case of the *comarcas* system in Panama in 1972 (Gonzáles 2015). Blaser et al. (2010) define autonomy as "the capacity of a community to give itself laws or practice self-governance" (5) but they also demonstrate how Indigenous movements in Latin America subvert and expand the meaning of

autonomy. Gonzáles provides a narrower definition claiming that Indigenous movements for territorial autonomy in Latin America are not associated with the constitution of a sovereign state and instead posit the right to self-determination within the juridical and political limits of the existing state. Contrary to his claim, movements such as the Mapuche Movement for Autonomy and National Liberation question the legitimacy of the nation-state and propose a strategy for national liberation (CAM 2002). For this Mapuche movement, autonomy signifies complete independence from the state, NGOs, and political parties (Llaitul 2013). Marimán et al (2006) define autonomy as "suspended sovereignty," a political-juridical instrument for self-government and self-determination (253). On the surface, autonomy movements are identified by their demands for territory and/or radical independence from the nation-state. Beneath the surface, these claims are guided by Indigenous cosmologies, ancestral laws, and "rights and responsibilities" (Black 2011) that Indigenous peoples have to the human and the more-than-human world.

Scholars (Blaser et al. 2010; Marimán 2004; Escobar 2010; Aylwin 2002) observe that Indigenous movements for autonomy are often misunderstood because their demands for territorial autonomy are misconstrued in economic or political terms, and fail to recognize the Indigenous cosmologies that guide them. Aylwin (2002) notes that the mayor challenge for the Chilean state has not been its capacity to respond to Mapuche demands for land, rather it has been their incapacity to comprehend and accept the immaterial components of Mapuche territorial demands, which are associated with the creation of spaces and the opportunity to control their communities. Following from Mapuche poet Leonel Lienlaf's message, "territory is limited to earth, but our territory is an infinite space. The recuperation of territory will lead to autonomy…" (fieldnotes 2013), we can understand demands for autonomy as demands for

spaces beyond land that prompt reflections on and reconsiderations of the modern geopolitical imagination.

Movements for sovereignty and autonomy propose alternative ways of being, ways of relating to other-than-humans, and ways of viewing progress. These movements are ultimately "ontological struggles" to define the nature of being, working to reveal the diversity of social experiences that are considered valid and credible (Blaser 2010; Marimán 2004; Escobar 2010). They aim to renew relations (Whyte 2017), restore reciprocity (Kimmerer 2011), and re-embed relationality into human values and practices (Blaser et al. 2010). These "multi-spatial and multi-scalar constellation of struggles that is forming now could potentially cohere into a broader epistemic shift…" (Yazzie 2016). The escalating climate crisis and catastrophic system changes have revealed the urgent need for transforming our relationship with all life. "What needs to be healed", Escobar (2018) points out, "is the entire system of relations, not just bodies or ecosystems." (3). He argues for ontological equity between the Indigenous worldview of "radical interdependence" and the Western worldview, which based on separation of the mind and body, and the individual and community. Creating equity between these two world views, he argues, requires a "civilizational transition." (Ibid.).

Integrating Knowledge Systems

During the fall of 2017, the Tubbs fire in northern California became one of the deadliest fires in recorded history, a year later, the even deadlier Camp fire incinerated the town of Paradise. In 2020, a historic heatwave and lightning storm ignited hundreds of fires that resulted in California's longest and most devastating fire season yet, with over 4 million acres burned (CALFIRE n.d.). California's experience is a dire warning for Chile, the tragic megafire of 2017

is not an outlier, it is the new norm. Climate models over the next decades predict a significant reduction in precipitation and increase in droughts that will undoubtedly increase the frequency and extent of wildfires. South-central Chile is particularly vulnerable to these changes in fire regime because of expansive monoculture of *radiata* pine (González et al. 2018, Díaz-Hormazábal and González 2016; Kitzberger et al. 2016; Shlisky et al. 2006).

As Middleton (2015) notes, climate change is an epistemic-spiritual problem in addition to political-economic-environmental one. Traditional knowledges acquired over millennia can promote resilience and adaptation to climate change, when combined with new technologies and scientific knowledge (Biskupovic et al. 2020). Integrating knowledge systems across disciplines and across the hemisphere is not only necessary, but fundamental to creating solutions to climate change and will require nothing short of a paradigm shift.

Across the Americas, Indigenous peoples used low-intensity under burning to manage the land, to prevent catastrophic fires, and to renew medicinal, food, and other cultural resources (Woodcock and Wells 1994; Kimmerer and Lake 2001; Kimmerer 2013; Lake et al. 2017). California tribes including Hoopa, Miwok, Karuk, Chumash, Yurok, and Wintun used these traditional or "cultural" burns for over 10,000 years until it was banned first by Spanish and later Anglo settlers (Lightfoot and Parrish 2009). Ignorant to the extent that Native peoples shaped their environment, Anglo settlers outlawed traditional burns and ridiculed the productivity of swidden systems in an effort to conserve the "wilderness"—the idea that nature was prior and external to humans erased the profound connection between people and places (Delaney 2001; Larson 2020) and justified the dispossession and genocide of Indigenous peoples. Fire suppression policies have resulted in increased fuel load and elevated risk of fatality and property damage, especially with the proliferation of human developments near forested areas (Berry

2007; Doerr and Santín 2016). Consequently, increasingly devastating fire seasons have compelled government officials and scientists to revaluate Native land management practices as an important ecological force that shaped California's environment. Over the past decades, Indigenous fire science has become recognized as a robust strategy for adapting to climate change in California (Marks-Block et al. 2019). NGOs, federal and state agencies are building collaborative partnerships with tribes that integrate traditional and western fire knowledge through culturally sensitive consultation and trust building. (Lake et al. 2017)[44].

California's recent innovations have become a model for Chilean fire management practices. In 2016, CALFIRE (The California Department of Forestry and Fire Protection) and CONAF (Chile's National Forest Corporation) signed an agreement of cooperation citing geographic and climatic similarities in the creation of common strategies for wildfire prevention and management (CONAF 2016). Collaborations were expanded in 2019 to include Chilean National Office for Emergency (ONEMI) and the California Governor's Office of Emergency Services (Cal OES) (CAL OES 2019). Despite the significant contribution of California Native knowledges to fire management, Indigenous peoples from both regions have been notably absent from these exchanges. Chilean agencies could learn much from California's process of consultation and inclusion of local tribes, and the recognition and protection of Traditional Ecological Knowledges in California. In integrating Indigenous knowledge for climate science research, there is a concern that scientists may exploit Indigenous communities for their knowledge. Whyte (2017) asserts that ethical policies and practices are necessary for this process

[44]California's Department of Forestry and Fire Protection (CAL FIRE) is legally required to consult with the Native American Heritage Commission (NAHC) and local tribes in the development and review of projects.

of bridging "epistemic, power and privilege, cultural, and political differences that scientists often are not trained to understand." (159).

With few exceptions (see Arias-Bustamante and Innes 2020), Traditional Ecological Knowledges of Mapuche and other Indigenous peoples in Chile are often peripheral to, or completely excluded from, prominent Chilean studies and policies on climate change. There is quantitative evidence of at least 500 years of fires in the native temperate forests of southern Chile (González et al. 2005), and studies also show that prior to Euro-Chilean colonization, Mapuche and Pehuenche peoples intentionally set fires for hunting, for clearing the land for horticulture and travel routes, and for fuel-extraction, however, there is still much uncertainty about the magnitude and impact of these fires (Holz & Veblen 2011). Further research of Mapuche and Pehuenche land management practices may reveal clues to managing the catastrophic wildfires and restoring fire regimes, as well as conservation of native forests. These kinds of studies have the potential to shape Chilean climate change policy and can promote the inclusion and revitalization of Indigenous cultures and knowledges. Cultural revitalization promotes the restoration of ecological integrity which in turn contributes to cultural renewal in a process "reciprocal restoration" (Kimmerer 2011).

Given the historical displacements and exchanges that have shaped California and Chile's landscapes, California Native knowledges could also contribute to Chilean wildfire management. In the Mediterranean climate-type ecosystem of central Chile, plant communities reveal little evolutionary exposure to fire. Unlike the California *chaparral* plant communities that evolved to be fire dependent, the Chilean *matorral* does not need fire to regenerate and can be harmed by frequent fire (Montenegro et al. 2004). Fire frequency creates positive feedback with invasive pyrophytic species such as *T. monspessulana,* who proliferate as a result of fire and in turn

increase the flammability of the landscape by creating large fuel loads (Kitzberger et al 2016; Pauchard et al. 2008). As Chile increasingly resembles California's pyrophytic landscape, we can also turn to guidance from Native California on how to prevent devasting wildfires.

Territorial Restitution and The Future of Chilean Forests

Nelson (2019) cautions us that the increasing frequency of catastrophic fires is alerting us to an imbalance. Fire can regenerate the land but it can also destroy, it is our role to create balance between these two facets (Kimmerer 2013). Since time immemorial, Indigenous peoples cultivated land-based practices and legal systems, such as *Az Mapu*, that maintained a reciprocal relationship with the land; it is no coincidence that ancestral Mapuche homelands coincide with a global biodiversity hotspot. Therefore, the renewal of relationships with our human and non-human relatives is fundamental to climate change mitigation and adaption (Kimmerer 2011; Whyte 2017; Yazzie and Baldy 2018). Restoring *ixofillmongen and az mapu* is the logical next step in creating a livable future for Chileans and Mapuche alike[45].

In order to restore reciprocal relationships with the land, Mapuche need governance over the ancestral territory (fig. 3). A comprehensive response to climate change has to include territorial restitution for Mapuche, starting with the land that was only recently expropriated for timber plantations in south-central Chile. *Colonialism often is painted as a thing of the past, whereas (as I have argued) dispossession is a recurring process, so there are many reversible acts of dispossession that could/should be rectified immediately.* This is a complex proposal given that most planting under corporate landholding has been subject to Decree Law

[45] Similarly, Hayman (2018) argues that Tlingit/Tagish Indigenous water legislation can behave as a model for Euro-American legal systems to readapt and reimagine relationships with rivers and glaciers…These sets of narratives can be seen as part of the bigger project of earth jurisprudence."

701(defined in chapter 3), which requires that parcels permanently remain in plantation forestry (Niklitschek 2007). Since the return to democracy in the 1990s, communities have contested the legality of corporate landholdings titles with limited success.

Chile is currently the only country in Latin America that does not recognize Indigenous peoples in its constitution, which creates challenges for the reclamation of territorial rights (IWGIA), however, this is expected to change (CIIR). Since 2019, Chile has been undergoing a historic social uprising provoked by the profound socio-economic inequality that accompanied Pinochet's neoliberal reforms. In a 2020 constitutional referendum, the overwhelming majority voted in favor of a new constitution that would replace the one inherited from the dictatorship. In 2021, a Mapuche scholar, Dr. Elisa Loncón[46], was elected President of the Chilean constitutional body in a landmark moment for Indigenous women in the Americas. The imminent constitutional recognition of Mapuche will advance land restitution and will ensure their full participation in Chile's economic, social, and environmental initiatives.

A transfer of lands could create the opportunity for initiating a Mapuche communal forestry program, such as the Yurok Tribal Community Forest in northern California. A new forestry model, based primarily on the management of native forest[47], could provide a source of income for rural communities through minimal harvesting; it could also provide the opportunity for the recovery and implementation of Mapuche traditional ecological knowledges (Millaman et al. 2016). Native and mixed forests maintained by small property owners, many whom are

[46] Dr. Elisa Loncón is a linguist and full-time professor of *mapudungun* research and pedagogy in the University of Santiago, Chile. She grew up in poverty in a rural Mapuche community in La Araucanía, enduring many hardships including racism and long-term food insecurity. Her mother was a housemaid and her father a carpenter who taught himself how to read as a teenager.

[47] See, for example, the tremendously successful forest management systems of northern Guatemala governed by ACOFOP via community forest concessions.

Mapuche, have less environmental impact because they are cultivated without pesticides, these forests also permit a coexistence with other native species that can provide food sources for humans and animals (Gonzáles-Hidalgo et al. 2013).

Food Sovereignty

Native forests also provide an avenue for food sovereignty and reduce reliance on intensive monoculture by providing a diversity of foods like the fruit of the pehuén tree (*Araucaria araucana*), hazelnuts (*Gevuina avellana*), murtilla (*Ugni molinae*), and fungi like digüeñes (*Cyttaria sp*) o los *changles* (Clavaria coralloides), these are highly nutritious foods that can be eaten directly or with minimal processing (Tacón 2004, Gonzáles-Hidalgo et al. 2013) (Fig. 3). The recovery of native forests is also instrumental to mitigating the effects of climate change, as they can capture more carbon in above ground biomass than monoculture plantations (Gayoso; Heilmayr et al. 2016 and 2020). Kimmerer (2011) argues that the "restoration of subsistence is tied to restoration of Indigenous cultural identity, language, health, and also to the vitality of the restored "resource" itself." Increased access to Native forests and food sources will advance the recovery of language, cultural knowledge and skills.

Figure 15. Digüeñes (left), an edible fungus that grows on the *Hualle* or Roble (Nothofagus Obliqua) tree (right)

Source: comidaschilenas.cl (right). Carneiro et al. (2012)

Figure 16. Piñon from the *Pehuen* or Araucaria (Araucaria Araucana) tree

Photo Credit: James Stuart

In a study conducted by Lagos et al. (2017), *Chedungun*[48] speakers consider their native language to be a part of nature[49]. For example, the word for path in *Chedungun*, rüpü, is the

[48] A dialect of *mapudungun*

[49] Similarly, in a study of aboriginal language revitalization in British Columbia, Baloy (2011) underscores the importance of recognizing and promoting the connections between land, language, and identity, ("placing") in order make places for aboriginal language education in the city ("making places"). Respondents in Baloy's study affirm that language is deeply rooted in the land base, acknowledging that inflections in their language are "the shape of

sound of walking on a dirt road. Studies by Barreau (2014 and Barreau et al. (2016) note that land loss and the Chilean school regime have deprived Mapuche of the opportunity to engage with their traditional pedagogy, a participant in their study stresses: "How can we teach our children if we cannot access the forest?" Mapuche *kimün* (knowledge) of plants, for example, cannot be transmitted without access to the ancestral territory, as a result the language that accompanies that knowledge becomes obsolete. In addition to providing food sources that reduce reliance on intensified agriculture, a new forestry model can advance the transmission of language and ancestral knowledge, or "biocultural memory" as per Ibarra et al. (2020).

Over the past decade, various initiatives and proposals have emerged in support of a new forestry model and native forest restoration in Chile[50]. These proposals maintain a hopeful vision for healthier economic, ecological, and social environments (MacFadden and Dirzo 2018; Donoso and Romero; Schneider and Burschel 2019). Recommendations include silvicultural tools to convert plantations into a "less hostile matrix" for ample native biodiversity (MacFadden and Dirzo 2018); the creation of stronger policies and regulations for conserving, managing and restoring native forests and managing plantations; and the need to distribute resources among small- and mid-sized forest owners (Donoso and Romero 2020; Schneider and Burschel 2019). Most importantly, these proposals underscore the necessity to end the current timber model of maximizing private profits at the expense of native forests and local communities.

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our land…When the winds hit our mountains and they come over, they drop into the valleys, they kind of move around through the forest. That's kind of the structure of the language …We adapt to our environment. Our language mimics that." A participant in Baloy's study asserts:

> If you look at different languages, languages are what the land looks like. So it's according to what your environment is. If you're not in that environment, you're displaced. Cut. That's why the language isn't happening, because we're not feeling that. . . . We can't feel our Mother, we can't feel our language (537-538).

[50] For example, CONAF's Intercultural Mapuche Forestry Model (MOFIM).

The incorporation of Traditional Ecological Knowledges is fundamental to the creation of a new forestry model that supports a process of "reciprocal restoration", a positive feedback between biodiversity regeneration, climate change mitigation, and recovery of Mapuche *kimün* (knowledge).

> Reciprocal restoration recognizes that it is not just the land that is broken, but our relationship to it. Reciprocal restoration encompasses repair of both ecosystem and cultural services while fostering renewed relationships of respect, responsibility, and reciprocity. All flourishing is mutual. (Kimmerer 2011)

A groundbreaking study by Arias-Bustamante and Innes (2020) provides valuable insight into how Mapuche communities in La Araucanía reduce the emission from deforestation and forest degradation by restoring their sacred places, protecting remaining native forest, and allowing natural regeneration of degraded areas. They conduct healing ceremonies to bring back *ngen* (guardian spirits) which rule sacred spaces and to restore the *az mapu*. This goes hand in hand with the reclamation and recovery of ancestral land, as well as the conservation and restoration of native forests through natural regeneration and replanting which creates new carbon sinks (Ibid.). Cultural and territorial recovery are essential components for climate/ system change mitigation and adaption. Recovery of ancestral territory and restoration of *az mapu* and *ixofillmongen* are imperative for the creation of a livable, vibrant future in Wallmapu.

Conclusion

The dramatic increase in wildfire activity following colonization by Spanish and by Euro-Chileans, the displacement of colonizing species such as *radiata* pine, and the displacement of Indigenous peoples have disrupted the reciprocal relations people had with their lands. Mapuche communities surrounded by *radiata* pine plantations are some of most vulnerable to the effects of climate change in Chile, yet their experiences and knowledges are frequently excluded from

mitigation and adaptation efforts. The inclusion of Indigenous peoples is fundamental to future research and policies geared towards restoring native forests and mitigating the effects of climate change. California can provide a valuable reference for integrating knowledge systems, particularly in the management of wildfire.

The creation of a new Chilean constitution, led by a Mapuche woman, is a promising horizon for the inclusion of Indigenous knowledges in social, economic, and environmental reform in Chile and beyond. A new constitution could also advance land restitution, a necessary step for restoring a reciprocal relationship with the land. A transfer of land could also initiate a new forestry model based on improved management and restoration of native forest. A diverse, resilient native landscape governed by Indigenous principles of reciprocity could ensure an equitable and livable future for Chilean and Mapuche alike.

Conclusion

Lessons from Wheat and Pine

Native American and Indigenous cultures regularly refer to their creation stories for guidance on lawful behavior (Deloria 1973, Kimmerer 2013, Nelson 2008, Bauer 2016, Black 2010). These oral histories detail how people came to be on the land, and are literal or metaphorical instructions for how to live in reciprocal relation with our human and nonhuman relatives. Many of these stories indicate that the first peoples were migrant peoples who became native to place by cultivating a reciprocal relationships with the land (Kimmerer 2013). In addition to creation stories, "migrant plant teachers" also offer instructions for how to become integrated, to coexist with others and make ourselves useful—or how, they can become an invasive, unwelcome species (Ibid.)., especially when asserted as single, simplified monoculture.

Monoculture wheat and pine offer valuable lessons on moderation. Intensive agriculture of wheat in Wallmapu rendered the soil fallow, created erosion and impoverished the ecosystem, and opened the land to other colonizing species. Similarly, intensive monoculture of pine renders the soil inhospitable to many native species, demands too much water, and creates a flammable landscape in which it can keep reproducing, explosively, without restraint. A mounting body of scientific data reveals a grim future for the country if *radiata* pine continues to proliferate without regulation. However, in a well-managed, diverse and resilient native landscape, *radiata* pine may not present a threat and could be part of mixed forest plantations.

Currently, native forests are severely fragmented (MacFadden and Dirzo 2018) making them vulnerable to invasion by pine (Bustamante and Simonetti 2005). However, the hope for native forest regeneration is not lost. Under certain circumstances, it may be possible for native species to regenerate in *radiata* plantations (Guerrero and Bustamante 2007); evidence of native

ectomycorrhizal fungi in soils invaded by pine also suggests that native trees can become established in a previously invaded area (Policelli et al. 2020).

Futhermore, well-conserved native forests with a close canopy cover can successfully resist invasion by the shade-intolerant *radiata*, even in the presence of a massive annual seed rain from nearby pine plantations (Gómez et al. 2019). This research shows that *radiata* pine can co-exist among native trees. Under a vibrant lush canopy of native forest, the pine can be kept in check and will not become invasive. Likewise, Indigenous jurisprudence can act like a native tree canopy that keeps the seeds of Wétiko[51]—greed and self-destruction—in check. Plants and humans can become destructive forces if allowed to extract without restraint. Indigenous legal systems like *az mapu*, are fundamental to moderating the relationship of reciprocal give and take with our environment.

Future Research

There is a continued need to investigate the benefits of Mapuche communal forestry and new models that center on the restoration and management of native forests. How can a new forestry model provide an avenue for reciprocal restoration? What are the cultural, ecological, and economic benefits of such initiatives? How can a Mapuche communal forestry program benefit from collaboration with other Indigenous projects, such as the Yurok Tribal Community Forest in northern California? Prospects for communal forestry in Chile are developing and studies can provide guidance for the creation of policies that will support their development.

[51] Jack Forbes (2008) describes wétiko as a disease, a contagion of exploitation, and self-destruction that "has been spreading…for the past several thousand years. And as a contagion unchecked by most vaccines it tends to become worse rather than better with time. More and more people catch it, in more and more places, and they become the true teachers of the young."

Earlier in this paper I presented the possibility of transcontinental, oceanic exchanges between north and south "America" prior to European invasion. This is a particularly challenging and intriguing topic which could perhaps be further investigated through various fields and methods such as oral histories, archaeology, ethnobotany, plant migrations, and genomic research. Further research of Mapuche and California Native migrations during the 18th and 19th may also deepen the connection between both regions. There are oral histories of California Natives escaping with "Chileans" during the mission period, and 49er accounts that make reference to "Chilian Indians," "Chileans servants," and "dark-skinned Chileans." The terminology found in these journals and archives is complicated by the fact that Anglo 49ers often called Mexicans "Chileans" because they ate chiles. In their ignorance, they often homogenized Latin America immigrants. Archival research of ship logs from the era would perhaps yield some answers.

Our identities are complicated by these ancient and modern migrations and our histories of colonization and forced assimilation. Within Native American Studies, there is a need to theorize beyond the settler/Native binary that fixes Indigenous peoples temporally and spatially. To return to Goeman (2013), the pitfalls of simplifying Native peoples "geomanticizes" their relationship to land into mystical or merely political categories that undermines their mobility and overlooks the gendered and violent nature of colonization (37). To move beyond this binary, Native American Studies can strengthen links with Latin American and Chicanx scholars to "renew our relatives," build solidarity, and address our complex identities. Aymara *mestiza* scholar Silvia Rivera Cusicanqui's (2010) notion of *chi'xi*[52], describes a third-space that "…is

[52] She uses the Aymara term *chi'xi* to denote a "double and contentious ancestry, one that is denied by the processes of acculturation and the "colonization of the imaginary"." (2010, 67)

potentially harmonious and free if we liberate our half-Indian ancestry and develop dialogical forms for the construction of knowledge" (67). How can we dialogue with notions such as *ch'ixi, champurria,* and mestizaje from within Native Studies? How do we act on our genealogical responsibilities to land when our ancestral ties have been broken? By engaging with the complicated histories of migration and mestizaje we can reimagine human relationships to place outside of structures and binaries of colonialism.

Lastly, there is the issue of territorial restitution. The "neoliberal territorial turn" of the past two decades (Bryan 2012), is a trend among global development institutions regarding the importance of legally recognizing Indigenous land rights. The supposition is that by ''regularizing'' ownership of land and resources through the development of national cadastral registries, Indigenous peoples can access credit and improve their land use, while at the same time strengthening their role in biodiversity conservation. The World Bank's heavily funded Land Aministration Project in Guatemala is a prime example of aggressive neoliberal land privatization based on rhetoric of market efficiency. In the (2013) report "Tierra e igualdad" by Grandia et al., the researchers show the limits of land titling by showing how the cadastre favored plantation owners and the wealthy. Like Anthias (2018), they reveal the historical context of colonialism and racism that shaped the land titling initiative, proliferating conditions of inequality in vulnerable population. Property was "regularized" in ways that only recognized individual rights, and led to the disintegration of commonly held lands by Indigenous peoples and increased land grabs by elites. Broadly speaking, then, land titling initiatives can be understood as a way of managing Indigenous peoples on territories of conquest. Territorial claims are unfolding on an already-mapped world (Bryan 2009). This begs the questions: is there a way to work within existing property systems for restitution? Better yet, can we imagine

fundamentally different ways of relating to land? What might territorial restitution look like if it is not based on western notions of property?

Like the third space of multi-ancestry identities, borders are dynamic and mobile meeting places, *xawümen*. By shifting our focus to recognize the dynamism and mobility of borders and bordering practices we are calling into question the fixed territorial sovereignty of the nation-state. Likewise, by calling into question the binaries of settler/Native we can disrupt settler-colonial organizations of space. As this paper has shown, nation-states are "a reducer of complexity" (Balibar 2002), homogenizing both the landscape and people within a territorial boundary (Rygiel 2010) through processes of social and environmental engineering (Scott 1998). Borders are not static objects delimiting territory as they were/are often portrayed, but rather, a "performance" (Balibar 2002; Parker and Vaughan-Williams 2009). In this dissertation I have presented a narrative of connectivity among Mapuche and California Native homelands. These historical links remap our conception of the "Americas" by demonstrating how seemingly detached places are mutually constructed and bound together by people, plants, and water. By acknowledging our relationality beyond the arbitrary borders of nation-states, we are creating new spaces of solidarity and collaboration for our mutual flourishing.

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Interview Protocols

1) What does the term ‘Mapuche’ mean?

¿Qué es lo que Ud. entiende por el término ‘Mapuche’?

2) Can you please describe your connection with the natural environment? What does nature mean to you and to the Mapuche community?

¿Puede Ud. describir su conexión con la naturaleza? Qué significa la naturaleza para Ud. y para el pueblo mapuche?

a) Does development affect your connection to the natural environment?

¿El desarrollo afecta su conexión con la naturaleza?

3) What is your role as a community elder/ youth?

¿Qué cree Ud. que es su papel como adulto/jóven de la comunidad?

a) Do you feel you have a social responsibility to the Mapuche community? If so, describe these responsibilities.

¿Cree Ud. que tiene una responsabilidades sociales a la comunidad mapuche? Si esto el caso, por favor describa estas responsabilidades.

b) What motivates you to fufill these responsibilities?

¿Qué lo/la motiva a cumplir con estas responsabilidades?

4) How do you view the Mapuche community currently?

¿Cómo ve Ud. actualmente al pueblo mapuche?

5) What are the biggest obstacles Mapuche experience nowadays?

¿Cuáles son los obstáculos más grandes que enfrentan los Mapuches hoy en día?

a) Do you perceive these obstacles to be solveable?

¿Cree Ud. que estos obstáculos tienen solución?

b) Can you recommend solutions to these problems?

¿Qué soluciones puede recomendar para estos problemas?

6) What are the biggest obstacles Mapuche youth experience nowadays?

¿Cuáles son los problemas más grandes que los jóvenes Mapuche enfrentan hoy en día?

a) Do you perceive these obstacles to be solveable?

¿Cree Ud. que estos obstáculos tienen solución?

b) Can you recommend solutions to these problems?

¿Qué soluciones puede recomendar para estos problemas?

7) Can you please tell me about development projects (like forestry) occurring in or near your community?

¿Puede Ud. contarme sobre proyectos de desarrollo (como las plantaciones de bosques) que están ocurriendo dentro o cerca de su comunidad?

8) What opportunities or problems do these development projects present? How are they affecting younger generations?

¿Qué oportunidades o problemas presentan estos proyectos de desarrollo? ¿Cómo están afectando a las nuevas generaciones?

a) Can you please describe in more detail the opportunities/ problems?

¿Puede Ud. describer con más detalle estas oportunidades o problemas?

b) What kind of actions are being taken by young Mapuche to solve these problems?

¿Qué acciones están tomando jóvenes Mapuches para resolucionar estos problemas?

i) Do you think these actions are effective? Why or why not?

¿Ud. Cree que estas acciones son efectivas? ¿Por qué?

9) What does Küme Mongen (a good life) mean to you?

¿Qué es lo que Ud. entiende por Küme Mongen?

10) How can Mapuche communities develop their Küme Mongen?

¿Cómo pueden las comunidades Mapuches desarrollar su Küme Mongen?